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# From the Editor

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This is the last issue this year and has a number of research papers and community care papers from the region.

A paper from Turkey compared results of the two methods of port catheter application and evaluation of patient comfort with visual analogue scale. Forty-six patients were port-catheterized. Group 1 (n=21) consisted of non-aided catheter procedures and Group 2 (n=25) consisted of ultrasonography aided catheter application procedures. The patients were asked to evaluate the in-procedural pain, the duration of the procedure, their comfort in the procedure and mark on a visual analogue scale. The mean age of the patient population was 53.85 years. A statistically significant difference was found in the operation length, puncture count, pain score and comfort score data of the groups. Operation length, puncture count and pain score were lower and comfort score was higher in Group 2 (p values respectively 0.001; 0.003; 0.031; 0.047). The authors concluded that visually aided port catheterization is less risky and more comfortable for both the surgeon and the patient.

A paper from Iraq reported a case of undiagnosed Left Renal Artery Aneurysm causing maternal and fetal death in late pregnancy. The authors stressed that rupture of a renal artery aneurysm during pregnancy is a rare event, and associated with high mortality and morbidity not only for the mother but also for the fetus. The diagnosis was made during caesarean section and confirmed by pelvic CT scan in spite of massive blood transfusion. Unfortunately the

mother and her baby died due to severe retroperitoneal hemorrhage. The authors concluded that the possibility of a ruptured renal artery aneurysm should be considered in pregnant women with evidence of retroperitoneal hemorrhage.

A second paper from Iraq looked at the effect of membrane Sweeping, on enhancement of the onset of labour. 120 pregnancies at gestational age of 39 weeks, who were followed up antenatal at our clinic, were recruited. All women were allowed until 41 weeks gestation until they were admitted if not delivered spontaneously to induce their labour. Group one were pregnant women of 40 weeks' gestation completed, put in for cervical sweeping at 40+2, 40+4 and 40+6 weeks. Group two were women at 40 weeks who were put in for prospective follow up awaiting spontaneous onset of labour. In group one, a total of 23 women (30%) ended by caesarean delivery and total of 10 (16%) had their membranes ruptured before the onset of labour. Group two (n=60) included 18 primipara women and 42 multiparous. 39 women (68%) went into labour before completed 41 weeks of gestation, 13 of them ended by caesarean delivery. The rest 21 (32%) women were induced, 8 of them ended by caesarean section. In group two, total of 21 women (36%) ended by caesarean delivery. The authors concluded that membrane sweeping increases the rate of spontaneous labour, it reduces the caesarean section rate, and nevertheless, there is marginal increase in the rate of spontaneous rupture of membranes before the onset of labour.

A paper from Lebanon discussed the way to motivate people toward better family planning in the Region. The various methods of family planning were discussed.

# Comparative results of the two methods of port catheter application and evaluation of patient comfort with visual analogue scale

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## ABSTRACT

**Objectives:** To evaluate the two different methods of port catheterization and evaluation of patient comfort with an objective scale.

**Background:** Port catheters are essential in long term drug administrations such as chemotherapy or intravenous alimentation.

**Methods:** Forty-six patients were port-catheterized between 01.05.2013 - 31.10.2013 in our clinic. Group 1 (n=21) consisted of non-aided catheter procedures and Group 2 (n=25) consisted of ultrasonography aided catheter application procedures. The patients were asked to evaluate the in-procedural pain, the duration of the procedure, their comfort in the procedure and mark it on a visual analogue scale. The scale was a 10 cm length straight line on plain paper numbered 1 at one end and 10 at the other end representing minimum and maximum values.

**Results:** The mean age of the patient population was 53.85 years (ranged between 13 and 80 years) and consisted of 25 (54.3%) males and 21 (45.7%) females. The catheter placement sites are as follows respectively (Group 1/Group 2): right internal jugular vein 20 / 22, left internal jugular vein 0 / 3 and right basilic vein 1 / 0. A statistically significant difference was found in the operation length, puncture count, pain score and comfort score data of the groups. Operation length, puncture count and pain score were lower and comfort score was higher in Group 2 (p values respectively 0,001; 0,003; 0,031; 0,047).

**Conclusion:** Visually aided port catheterization is less risky and more comfortable for both the surgeon and the patient.

**Key words:** Port catheterization, central catheterization, vascular ultrasonography, chemotherapy

## Introduction

Vascular port catheters provide an easy method of vascular access when it is difficult to find a durable venous vascular access in oncology patients who have to get long term chemotherapy. Patient comfort and adherence to medical treatment may increase with a long lasting port catheter. We aimed to compare the results of the two methods of port catheter application and evaluate the affects on patient comfort in this prospective study.

## Material and Methods

We have placed vascular port catheters to a total of 46 patients between 01.05.2013 - 31.10.2013 in our clinic. The indications for port catheter application were long term chemotherapy administration, long term anti-biotherapy administration and intravenous alimentation. The patients were evaluated by their general vital conditions, hemorrhagical diathesis, presence of any kind of mass or local infection at the placement site which is internal jugular vein or subclavian vein. Informed consent was taken from all of the patients before the procedures. All catheters were placed by the same surgery team. Prophylactic anti-biotherapy was not routinely administered.

Right internal jugular vein was the first site of choice for the port catheter application. In case of any abnormal state at that location and mastectomy patients, contra-lateral vein was preferred. If ultrasonographic examination was needed, jugular veins were evaluated before the sterilization of the catheter site. The whole process was conducted in the surgery room after proper monitoring was set and under local anesthesia. Single lumen port catheters were used in all of the patients (Vortex VX Port, AngioDynamics Manchester, USA). A subcutaneous port pocket was prepared in the anterior chest wall. After connecting the port body and catheter parts, the flow of the catheter was checked by flushing with normal saline. Then it was filled with heparinized saline solution (2500 units of heparine in 10 cc normal saline). The port body was implanted into the subcutaneous pocket. All patients were evaluated for pneumothorax, the orientation, kinking and malpositioning of the catheter with chest radiogram 1 hour after the procedure. The non-complicated patients were discharged 2 hours after the procedure with per oral antibiotic (cefuroxim 500 mg 2x1) and analgesic (paracetamol 500 mg 3x1) drugs prescription. At 1 week follow-up patients were examined for complications such as hematoma, endurance, erythema, oedema and suture dehiscence at the port implantation site.

The patients were asked to evaluate the in-procedural pain, the duration of the procedure and their comfort in the procedure and mark it on a visual analog scale. The scale was a 10 cm long straight line on plain paper numbered as 1 at one end and 10 at the other end representing minimum and maximum values.

### Surgical Technique:

The procedure was done in the operation room. After proper cardiac rhythm and arterial blood pressure monitoring and local anesthetic drug administration venous puncture was done with the 18 gauge venous needle. After venous puncturation 0.035 inch thick guidewire was inserted into superior vena cava. Then the same side of the pectoral region with the venous puncture was locally anesthetized about 2-3 cm caudal to the clavicle

to prepare the subcutaneous pocket for the port body. The subcutaneous pocket was prepared by blunt dissection of the subcutaneous tissue through a 3 cm long skin incision. Care was taken to prepare the pocket at the proper size for the port reservoir. Then a tunnel was formed between the port pocket and the catheterization site with the help of a trocar and the catheter was placed through this tunnel. A peel-away sheath was placed over the guidewire and then the guidewire was pulled out. The other end of the catheter was inserted through this sheath. Then the sheath was peeled away. The catheter was cut after adjusting the proper length and then connected to the port body itself. The catheter-reservoir connection was checked for any leakage with a Huber needle. The port reservoir was firmly fixed to the chest wall with two silk sutures. The subcutaneous tissue and the skin incisions were sutured properly.

### Statistical Analysis:

The statistical analysis of the data was done with SPSS 13 (Statistical Package for the Social Sciences) for Windows program. The normality of the data was tested with Shapiro-Wilk test. The normally distributed data were evaluated with t-test and non-normally distributed data were evaluated with chi-square test and Mann-Whitney U test. P values lower than 0.05 were accepted as statistically significant.

## Results

A total of 46 patients between 01.05.2013 - 31.10.2013 were port catheterized in our clinic. The mean age of the patient population was 53.85 years (ranged between 13 and 80 years) and it consisted of 25 (54.3%) males and 21 (45.7%) females. The patients were divided into two groups. In Group 1 (n = 21), venous puncture was done manually and in Group 2 (n = 25) it was done with the aid of ultrasonography (Esaote Europe BV 8100; The Netherlands) using a sterile covered 13 MHz linear probe. The demographical data of the groups are listed in Table 1.

The main indication for port catheterization was intravenous drug administration except in 1 patient. That patient needed a port catheter for intravenous (IV) alimentation. The diagnosis and catheter indications of the groups are listed in Table 2.

The catheter placement sites are as follows respectively (Group 1/Group 2): right internal jugular vein 20 / 22, left internal jugular vein 0 / 3 and right basilic vein 1 / 0 (Table 3). A statistically significant difference was found in the operation length, puncture count, pain score and comfort score data of the groups. Operation length, puncture count and pain score were lower and comfort score was higher in Group 2 (p values respectively 0,001; 0,003; 0,031; 0,047) (Table 4).

Malpositioning of the catheter occurred in 1 patient in Group 1. The catheter went through the right subclavian vein. Then it was retracted partially and re-inserted into the superior vena cava with the help of the guidewire. Hematoma occurred in 2 patients in Group 1 at the venous puncture site. Port infection occurred in 2 patients in Group 2 and ports were removed. Skin erosion occurred in 1 patient in Group 1 after 3 months of the procedure and the port body re-placed somewhere else. There were no hemothorax, pneumothorax, vein thrombosis or kinking (Table 3).

**Table 1: Demographic data of the group**

	Group 1 (n=21)	Group 2 (n=25)	p value
Age Median (min-max)	57 (13 - 78)	56 (19 - 80)	n.s.
Gender			
- Male	11	14	n.s.
- Female	10	11	n.s.
DM	1	2	n.s.
HT	4	2	n.s.
COPD	1	3	n.s.
Smoking	6	8	n.s.
Obesity	2	4	n.s.

BMI: Body mass index; DM: Diabetes mellitus; HT: Hypertension; COPD: Chronic obstructive pulmonary disease.

**Table 2: Indications for port catheterization**

Indication	Group 1 (n=21)	Group 2 (n=25)	p value
Breast ca	1	3	n.s.
Colon ca	10	7	n.s.
Stomach ca	0	3	n.s.
Rectum ca	2	2	n.s.
Nasopharynx ca	1	2	n.s.
Other	7	8	n.s.

**Other:** Parotid ca, Acute lymphocytic leukemia, Hypopahrynx ca, Oesaphagus ca, Omentum tumor, Small Intestine ca, Cerebral Palsy, Uterus ca, Mesothelioma, Bone tm

**Table 3: Port catheterization sites**

	Group 1 (n=21)	Group 2 (n=25)	p value
Right internal jugular vein	20	22	n.s.
Left internal jugular vein	0	3	n.s.
Right basilic vein	1	0	n.s.

**Table 4: Operational data and visual analogue scale (VAS) scores**

	Group 1 (n=21) Mean (min - max)	Group 2 (n=25) Mean (min - max)	p value
Venous puncture count	3.57 (1 - 8)	1.56 (1 - 4)	0.003
Operation time (mins)	31.29 (15 - 66)	20.0 (13 - 31)	0.001
<b>VAS scores:</b>			
Pain score	4.67 (1 - 10)	3.12 (1 - 6)	0.031
Operation length score	4.71 (1 - 8)	3.88 (1 - 8)	n.s.
Comfortability score	8.24 (7 - 10)	8.72 (8 - 10)	n.s.



## Discussion

We found that operation length, puncture count and pain scores were lower and comfort score was higher in Group 2 ( $p$  values respectively 0,001; 0,003; 0,031; 0,047). The port catheter itself can provide a safe and long lasting vascular access in chronic chemotherapeutic drug recipients and for IV alimentation purposes. We think that ultrasonography support in the procedure may shorten the operation time, reduce the complication rates and increase patient comfort.

The main indication for port catheterization we see nowadays is to provide a safe vascular access in malignancy patients. Also it is not very rare to see port catheters in patients who need long time hospital care such as chronic gastrointestinal system illness or neurological disease and usually peripheral venous access of these patients are dried out. The port catheters seem to be advantageous according to other tunneled catheters with lower infection rates, longer durability and non-restriction on the patients' daily life activities (1,2). Hajek et al (3) reported that in malignancy patients with longer than 6 month life expectancy, vascular port catheterization is better than other percutaneous interventions.

Pneumo/hemothorax, malpositioning, malfunctioning, arrhythmia, cardiac perforation, hematoma in port pocket or in vascular puncture site, venous thromboembolism, arteriovenous fistula, left thoracic duct rupture, phrenic nerve or brachial plexus injury are common complications in the early period after port catheterization procedures. Later complications can be skin necrosis, breaking in the catheter, embolisation of the catheter, infection, disconnection, difficulty in blood aspiration through the catheter and fluid extravasation (4-7). Visual aid in the catheterization procedure may mostly prevent the complications such as pneumothorax, hemothorax, arterial injury and catheter malpositioning (8).

Preparing the port pocket too close to the skin and large port selection in thin patients may cause skin erosion in the pocket site. Skin erosions are reported to be in about 1% of the patients (9). Placing the port too close to the skin may be related to the experience of the surgeon but to avoid skin erosion in thin patients the port may be placed under the pectoral fascia or pectoral muscle. We have seen skin erosion in 1 patient in Group 1 after 3 months of the operation. In that case the port body was removed and placed 2 cm lateral to the original site under local anesthesia. We have also seen two cases of port access difficulties. Those patients were port catheterized in some other hospitals and attended our clinic with the complaint of port access difficulty. We have seen that those ports were placed under the pectoral muscle. The port bodies were replaced closer to the skin surface and thus the difficulty in accessing the ports was corrected.

We preferred right internal jugular vein in the first place for the venous access site. Right internal jugular vein and superior vena cava forms a straight line so that the catheter contacts less to the vascular wall and the risk of venous thrombosis diminishes (10). We have preferred left internal jugular vein in patients with right internal jugular vein occlusion or mastectomy.

Different rates of port infection are reported in the literature ranging between 2.6% and 9% (9,11,12). We did not see any infection in the early period (in 1 week). In the later period we saw 2 (8%) port related infections in Group 1 and these ports were removed. In one of these patients port pocket infection was found and *Pseudomonas* was determined in wound site specimen culture. The other patient had repeating fever episodes weekly after 1 month of the procedure but no other source of infection was spotted in that patient.

One of the important complications of the central venous catheters is the catheter related thromboembolism. Ignatov et al (13) reported the incidence of thrombosis to be about 7.5%. Bern et al (14) reported that administration of 1 mg oral warfarin daily reduces the risk of thromboembolism about 20%. We did not administer any anti-coagulant or anti-aggregant agent in our study. But the port-catheter system maintenance was done by flushing the system with normal saline and then re-filling it with diluted heparine-saline solution. We did not see any thrombosis in the early period in our study patients. We have seen a catheter thrombosis after 4 months of the procedure but this patient was catheterized in some other clinic and we removed the thrombosed catheter.

We have accepted it as failure of catheter application when ultrasonography aid was needed in the procedure in Group 1 patients and these patients were included into Group 2. We had 4 (16%) procedures in which the catheters were intended to be manually inserted but after some trials ultrasonography aid was needed. In a study conducted with over 400 patients it is reported that the rate of success in port catheterization with the conventional surgical technique is about 80% (15). Our success rate is 84% and is similar to the literature. Most of our study patients were accepted for catheterization in the early postoperative period of oncological surgery and most of the patients were dehydrated. We think that these factors may reduce the success rates in the non-ultrasonography aided group.

Arterial, nerve or pleural injury may be reduced when the ultrasonography aid is used in the procedure (16). Randolph et al (17) reported that the risk of vascular or nerve injury is reduced about 80% when ultrasonography is used. Gebauer et al (18) used fluoroscopy and ultrasonography in the procedure and reported that they had no complications such as nerve injury, hematoma or pneumothorax. The venous puncture count before catheter insertion was significantly lower in the ultrasonography aided group (Group 2) in our study ( $p=0,003$ ). We had 2 local hematomas at the venous puncture site in Group 1 but the hematomas resolved in time.

The Visual Analogue Scale (VAS) was used in this study. It is commonly used in many clinical and behavioural studies to standardize and measure the non-objective data such as pain and comfort (19 - 21). VAS is consisted of a 10 cm long line on a plain paper. One end of the line represents the worst condition or lowest degree and the other end represents best condition or highest degree and patients are asked to mark their degree of what is being measured on the scale (22). The VAS scores of pain are significantly lower in Group 2. That means patients had felt less pain when the procedure was done with ultrasonography aid. The comfortability scores were nearly

equal with each other. That means patient comfort during the procedure was nearly equal.

## Conclusion

Most of the hospitalized patients suffering from chronic illnesses also suffer from central or peripheral vascular catheters. These catheters may be occluded, infected or inflamed and then need to be revised or changed. Every attempt of recatheterization means pain and risk of infection for the patient. Also no clinician would like to lose a patient because of septicemia caused by a small venous catheter. We think that the port catheters come in aid here. They can be inserted with low complication rates and if ultrasonography aided these rates are even lower. Also they increase patient comfort and daily life quality.

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# Membrane Sweeping, does it enhance the onset of labour?

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## ABSTRACT

**Objective:** The aim of this study is to assist the effect of multiple sweeping of the cervix on the onset of labour and on caesarean section rate.

**Methods:** 120 pregnancies at gestational age of 39 weeks, who were followed up antenatal at our clinic, were recruited. Only women with uneventful pregnancy course with singleton pregnancy were included. They were asked to participate in the study and were asked to choose between having cervical sweeping at 40 weeks gestation or to be left to continue without interference. The procedure was explained to all women and they were offered other possible modalities of care. As per our protocols; all women were allowed until 41 weeks gestation until they were admitted, if not delivered spontaneously, to induce their labour. Participants were grouped into two groups for the study purpose: Group one were pregnant women of 40 weeks' gestation completed, put in for cervical sweeping at 40 weeks plus 2 days, 40 weeks plus 4 days and 40 weeks plus 6 days. Group two were women at 40 weeks who were put in for prospective follow up awaiting spontaneous onset of labour. The two groups were compared looking at labour onset, rupture of membranes and caesarean section rate.

**Results:** Group one (n=60) included 19 primipara women and 41 multiparous. 49 women (82%) went into labour before they completed 41 weeks of gestation, 14 of them ended by caesarean delivery. The rest, 9 women (18%), were induced, nine of them ended by caesarean section. In group one, a total of 23 women (30%) ended by caesarean delivery and a total of 10 (16%) had their membranes ruptured before the onset of labour.

Group two (n=60) included 18 primipara women and 42 multiparous. 39 women (68%) went into labour before they completed 41 weeks of gestation, 13 of them ended by caesarean delivery. The rest, 21 (32%) women, were induced, 8 of them ended by caesarean section. In group two, a total of 21 women (36%) ended by caesarean delivery.

**Conclusion:** Membrane sweeping increases the rate of spontaneous labour; it reduces the caesarean section rate and nevertheless, there is marginal increase in the rate of spontaneous rupture of membranes before the onset of labour.

**Key words:** sweeping, labour, rupture of membranes, caesarean section



## Introduction

Sweeping of the membranes to induce labour is an old practice: in 1810, James Hamilton proposed inducing labour by sweeping the membranes instead of amniotomy, in order to avoid infection(1). However, it was not until the 1950s that sweeping of the membranes became the subject of scientific research. In 1958 Swann(2) reported that it was effective in women with a favorable cervix, but effectiveness was not explained until 1974 by Gustavii(3), who found that sweeping of the fetal membranes stimulated prostaglandin production by damaging the decidual cells. In 1993 McColgin et al(4) found that membrane sweeping was associated with an increase in both phospholipase A2 activity and prostaglandin F2 $\alpha$  concentrations.

Sweeping of the amniotic membranes, also termed stripping of the amniotic membranes, is a fairly simple method usually performed at the antenatal clinic. During vaginal examination, the operator's finger is introduced into the cervix, then, the lower pole of the membranes is separated from the lower uterine wall by a spherical movement of the examining finger. This interference has been proposed to initiate labour pain by local production of prostaglandins and thus potential uterine contraction, to reduce pregnancy duration or to avoid formal induction of labour with oxytocin, prostaglandins or artificial rupture of membranes. It is proposed that this can cause release of prostaglandins that may soften and thin the cervix. This in turn, can trigger labour pain to initiate naturally within the coming 48 hours. Studies were conducted on membrane sweeping; others on cervical massage(5), some found it to reduce post-term pregnancies(6), others failed to demonstrate its beneficial effect on obstetrical outcome(7).

Sweeping of membranes is a safe method to reduce the incidence of prolonged gestation in a low-risk population. None of the studies conducted on membranes sweep demonstrated any increase in either maternal or neonatal adverse outcomes (8). One study showed its efficacy on labor and delivery outcome, but this was limited to nulliparous who had unfavorable cervix(9). It has been shown that membrane sweeping done frequently did not influence the likelihood of delivery at 41 weeks of pregnancy. The important factor is Bishop's score at around 39 weeks and it predicts the duration of pregnancy more truthfully. Trans-vaginal ultrasound cervical length assessment is even better than Bishop's score in predicting the success of induction of labour(10). More studies would be required to determine if membrane sweeping influences the duration of pregnancy(11).

Our study was directed to establish the best conduct in managing pregnancies at term. Minimizing the number of women needing induction of labour is desired by all obstetric units. Membranes sweep at term is practiced by many obstetric units. It is easy and affordable, but it causes some discomfort to women already anxious late in pregnancy. We aimed to show our experience of membrane sweep and the worth of the discomfort it gives to women.

## Methods

We conducted this study at the antenatal clinic of King Hussein Medical Center, a teaching hospital. Women included in the study were healthy women, with no past history of pregnancy complication such as growth restricted babies, diabetes or hypertension. All women had singleton pregnancy with no past history of caesarean section. The due expected delivery date was determined by early gestation ultrasound scans. We recruited women at 39 completed weeks of gestation after conducting late gestation scan to exclude cases with fetal malpresentation, large and small babies, amniotic fluid abnormalities and placenta praevia.

Women were asked to choose between having a cervical sweep at 40+2, 40+4 and 40+6 weeks gestation, and anticipating spontaneous labour prospectively with no intervention. Options were explained to participants and other modalities of managing late pregnancy were also offered.

Women who did not go into labour until 41 weeks completed pregnancy were admitted for active management to induce labour by prostaglandins as per labour protocols.

120 women fulfilled the requirements and accepted to participate in the study. They continued follow up until 41 weeks gestation. 60 women were scheduled for cervical sweeping and named Group one; the other 60 were planned for prospective management and named Group two.

Women in Group one, study group, (n= 60) had scheduled visits to the midwife for cervical sweep at 40+2, 40+4 and 40+6 weeks gestation. Women who were found to have labour pain or if the Bishop score was 8 or greater, at any time between 40 and 41 weeks of gestation, were considered positive; the rest were taken as failed.

Women in Group two, control group, (n=60) were asked to check for fetal wellbeing by ultrasound and kick charts until week 41 completed of gestation. If they had labour pain at any time between 40 and 41 weeks of gestation they were considered positive. Women who failed to go into labour spontaneously had cervical assessment. If Bishop score is 8 or greater, they were considered positive also. The rest were considered negative.

Chi-square test was conducted to find significance between the two groups. P-value was considered significant at  $p < 0.05$ .

## Results

During a 12 month period, 207 women who fulfilled the criteria were asked to participate. 186 agreed to take part in the study. An additional 16 women were excluded because of malpresentation of the fetus. 12 women had ruptured membranes before 40 weeks of gestation. Another 22 went into labour before 40 weeks. 16 failed to present for evaluation and sweeping for unknown reasons. 120 women were left in the trial. The mean age for women in group one was 28.3, for group two it was 27.6 years.

Parity for group one was between zero and six, with mean parity of 3.85, and for group two between zero and 5, with mean of 3.39.

Women in both groups were comparable in regards to age and parity (Table 1).

**Table 1: The age and parity of women for both groups**

Groups' characteristics	Sweeping (n= 120)		Control (n= 120)	
	Mean	SD	Mean	SD
Age (years)	28.3	[4.1]	27.6	[3.2]
Parity	3.85	[1.9]	3.39	[1.7]

Values are given as mean [SD].

Successful spontaneous deliveries within one week were more likely in the sweeping group; forty one (68%) women in the sweeping group compared to 38 (65%) women in the control group, (OR 1.25).

Instrumental deliveries in both groups were comparable.

Caesarean section rate in the sweeping group was slightly lower compared to control group, (OR 0.75). Adverse effects related to sweeping were few: accidental rupture of the membranes occurred in one case, significant blood loss warranting a short observation occurred in another.

Neither spontaneous deliveries nor caesarean section rate deference in both groups reached statistical significance, (Table 2).

**Table 2. Labour and delivery characteristics. Values are given as n (%).**

	Group 1 Sweeping (n = 60) n (%)	Group 2 Control (n = 60) n (%)	OR (95% CI)	Chi-square	P value
Spontaneous labour	41 (68)	38 (65)	1.25 (0.58–2.66)	0.3334	0.56 n/s
Instrumental delivery	7 (12)	7 (12)	1	0	1 n/s
Caesarean section	12(20)	15 (25)	0.75 (0.31–1.77)	0.4301.	0.51 n/s

This result is not significant at  $p < 0.05$ .

## Discussion

Sweeping of membranes has been used for a long time. The main reason is to reduce significantly the number of women reaching 41 weeks, in order to avoid difficult discussions about induction of labour. Pregnant women are doubtful about the benefit; they become hesitant when offered it by the obstetrician. The discomfort it causes adds to the hesitancy. We aimed to find out our own results so that counselling the patients will be boosted by our data. A recent randomized controlled trial(12,13), confirmed the effectiveness of elective induction of labour by different methods only at 41 weeks of gestation and beyond may be associated with a decrease in both the risk of cesarean delivery and of meconium-stained amniotic fluid. In our study we selected sweeping of the membranes as the method to induce labour, as well as studying the incidence of caesarean section and instrumental delivery.

Many randomized trials have been done to study the effect of sweeping of the membranes on the commencement of labour. Studies were conducted at term pregnancies and the results

were conflicting. Some of them found no difference in the outcome(7,14) and not praiseworthy. No increase in obstetric complications or increased risk to the mother and the fetus was found( 8,15).

When offering cervical sweep, the mothers discomfort needs to be balanced against the benefit. Therefore some studies found that Sweeping of the membranes at term is safe and reduces the incidence of post-date gestation(16). Those studies found that weekly sweeping prepares women by putting them in a pre-labour situation where cervical ripening effect is enhanced by irregular contractions. They found that women assigned to sweeping of the membranes had an improved Bishop Score when admitted and less induction of labour rate, therefore frequent sweeping may have improved outcome when compared to a single one.

We conducted our study for women in different age groups; 18 to 40 years old (mean 28), with parity that ranged from nullipara up to para 5, (mean 3.5). Women who had cervical sweep, as per our study design, (at 40 weeks +2, +4 and +6 days), had marginal increased chance of delivering their babies

at 41 weeks gestation when compared to prospective management. This increase would enforce the previous studies with similar results although it did not reach statistical significance. The sample number used in our study is small, and other variables such as previous uterine scar were not included. This presents some limitation. Larger studies are needed to specify the efficacy of cervical sweep; for the true value for different women with different parity and in women with previous uterine scar, the frequency and the best timing is not established. Until then we cannot agree with studies that encouraged the cervical sweep.

We had two cases of unintended rupture of the membranes and one heavy show or vaginal bleeding during sweeping. Those incidents were not submitted to any analysis because of their paucity in our study. They may indicate that sweeping of the membranes is not entirely free of risk.

## Conclusion

Cervical sweeping had no effect on the delivery rate or the caesarean section rates statistically; nevertheless, marginal increase was noted.

No difference in instrumental deliveries was found.

Larger studies are needed.

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# Undiagnosed Left Renal Artery Aneurysm causing maternal and fetal death in late pregnancy: A case report.

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## **ABSTRACT**

**Introduction:** Rupture of a renal artery aneurysm during pregnancy is a rare event, and is associated with high mortality and morbidity not only for the mother but also for the fetus. Increase in cardiac output and blood volume, with increased intra-abdominal pressure from enlarging uterus, and hormonal factors acting on blood vessel walls causing a relaxation of vascular walls are predisposing factors to the increased risk of rupture during pregnancy.

**Case presentation:** We report a case of undiagnosed rupture of renal artery aneurysm in a pregnant woman during labour. The diagnosis was made during caesarean section and confirmed by pelvic CT scan in spite of massive blood transfusion. Unfortunately the mother and her baby died due to severe retroperitoneal hemorrhage.

**Conclusion:** The possibility of a ruptured renal artery aneurysm should be considered in pregnant women with evidence of retroperitoneal hemorrhage.

**Key words:** aneurysm, renal artery, pregnancy



## Case Report

A 35 year old female patient, Gravida 9 para 8, in her 38th week of pregnancy, with no significant medical history, presented to our obstetric unit at Al-karak Military hospital as labour pain. On examination her blood pressure was 140/90 mmHg and pulse rate 80 beats per min. An ultrasound was performed which revealed a viable fetus in cephalic presentation with normal growth matching the gestational age. Doppler studies were within normal values and amniotic fluid was reported as normal. The cervix was 3 cm dilated.

Three hours after admission in the labour ward the patient started to have sudden onset of severe left flank pain associated with nausea. Repeated vitals were taken; they demonstrated an increase in heart rate up to 120 beats/min and systolic blood pressure at 90 mm Hg. Her laboratory values revealed hemoglobin of 4.7 g/dL and hematocrit of 15.5%. The patient was aggressively resuscitated with isotonic fluids and 3 units of packed red blood cells. She responded appropriately to transfusion. When stable, she underwent a computed tomography scan of the abdomen and pelvis which demonstrated a moderately sized retroperitoneal hematoma surrounding the left kidney. The patient was taken to the operating room with suspicion of ruptured uterus; the patient looked pale with evidence of blood loss. Re-assessment of the fetus showed absence of fetal heart motion.

The patient continued to show drop of blood pressure, 90/50, thready pulse of 100 and marked tenderness to palpation of her left flank.

The patient underwent urgent laparotomy. A classical caesarean section was performed under another blood. Four units of whole blood were transfused rapidly but deterioration continued. Blood pressure was un-recordable; the pulse volume was very weak. Still birth fetus was extracted in cephalic presentation with no signs of obvious structural abnormalities. There was no active bleeding in the abdominal cavity but the uterus was pushed to the right side by a large retroperitoneal hematoma. Hematoma was opened; left renal artery was seen to be dilated and ruptured. Trial of clamping of the artery was performed; at that time the patient arrested despite having received 21 units of blood.

## Discussion

Renal artery aneurysm (RAA) is a rare condition, with an incidence ranging between 0.01% and 0.09%, and accounts for 1% of all aneurysms. In the past this condition was discovered accidentally or only diagnosed after autopsy(1).

Nowadays with the introduction of angiography imaging techniques in practice, more frequent cases have been diagnosed but the incidence is still low(2). Risk factors for rupture include incomplete calcification, size >2 cm, progressive enlargement and pregnancy(3). Rupture of RAA in a kidney during pregnancy is a rare and well described catastrophic event, with a high mortality rate for both mother and fetus(4).

RAA are divided into true and false. True aneurysms are caused by congenital weakness; atherosclerosis and trauma. False aneurysms are posttraumatic, with rupture of the artery and occlusion of the defect by blood clot.

Reviews of rupture of RAA during pregnancy were made by Burt in 1956 and by Pedowitz in 1957. Factors that appear to increase the incidence of rupture during the third trimester of pregnancy are: an increase in cardiac output and blood volume, an increase of intra-abdominal pressure with enlarging uterus and hormonal factors acting on blood vessel walls causing a relaxation of vascular walls.

Diagnosis of rupture of RAA during pregnancy is very difficult as there is no pathognomonic pain or presentation. When rupture occurs during pregnancy the clinical presentation is easy to be confused with those more common conditions like placental abruption or ruptured uterus as in our case. Most of the cases were discovered incidentally or after autopsy. When rupture of RAA occurs during pregnancy it carries a high fatality or poor fetomaternal outcomes. When RAA is diagnosed during pregnancy the treatment modalities, are conservative if non calcified and small <2 cm or aneurismal resection and vascular reconstruction. End to end anastomosis or nephrectomy is done when the patient has extensive renal injury or is haemodynamically unstable. It is usually done as a life saving procedure.

The clinical presentation of our case was easily confused with those more common conditions, as she was thought to have either a placental abruption or ruptured uterus.

Dayton et al(4), reported that in a case of ruptured RAA during pregnancy, the retroperitoneal anatomy may be severely distorted by massive haematoma. It may be nearly impossible to determine the exact anatomy of renal vessels and the presence or absence of the contra-lateral kidney at the time of surgery.

Spontaneous rupture of RAA is more likely to occur during pregnancy and when it does, it is associated with high mortality for both the mother and fetus. Increased blood flow and intra-abdominal pressure, and vascular changes secondary to increased steroid production are postulated as contributory to the increased risk of rupture of RAA during pregnancy(5).

## Conclusion

The possibility of a ruptured RAA should be considered in pregnant women with evidence of retroperitoneal hemorrhage.

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# Motivating People to Take Appropriate Family Planning Measures

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## Introduction

The last two decades have witnessed a major progress in family planning. The improvement has been unequal in different areas, countries, and even within countries. Over 100 million acts of sexual intercourse take place each day. These result in 910000 conceptions. About 50% of the conceptions are unplanned, and about 25% are definitely unwanted. About 150000 unwanted pregnancies are terminated every day by induced abortion. One-third of these abortions are performed under unsafe conditions and in an adverse social and legal climate, resulting in some 500 deaths every day. 1370 women die every day in the course of their physiological and social duty of pregnancy and childbirth, and many times more this number have a narrow escape, though not without significant physical and psychological injuries. Family planning not only prevents births, it also saves the lives of women and children. 300 million couples do not have access to family planning services.

The most important development in reproductive health over the past few decades has been the marked spread of contraceptive use worldwide, with potential benefits to individuals, families, societies, and the world at large. The need to control fertility has been recognized by people living in the most varied social circumstances who have different needs and views. They include women and men from all socioeconomic strata. Some are adolescents trying to postpone a first pregnancy. Others are mothers wishing to space births, and yet others are women wanting to put an end to their child-bearing career. They may hold widely different cultural values and religious beliefs, and they may be well served or under-served by their health care systems, but all are seeking better health and happiness (1).

## Rationale for Use of Contraception

Three major rationales account for the rapid expansion in contraceptive use: the human right rationale, the demographic rationale, and the health rationale ( 2 ). All three have evolved separately, at different times and with different objectives. In historical terms, the human rights rationale was the first basis around which organized efforts to expand contraceptive use were undertaken. The evolution of this rationale began when women started to claim their rights as equals and as partners.

After that, it was not long before women realized that without the ability to regulate fertility they would not be able to control and take charge of their lives. A woman's control over her own fertility has been called "the freedom from which other freedoms flow." A woman who has no control over her fertility cannot complete her education, cannot maintain gainful employment, cannot make independent marital decisions, and has very few real choices open to her.

A recent UNDP report (3) defined human development as "a process of enlarging people's choices." For half of the world's population, i.e., women, the ability to regulate and control fertility is indispensable for human development. The demographic rationale for family planning emerged in response to concerns about the negative effect of rapid population growth on socioeconomic development. The health rationale, is the fact that through family planning a lot of lives are saved including mother and children. The consequences of the failure to use contraception are well known, the increased morbidity and mortality associated with pregnancy, and the increased number of unplanned pregnancies with their concomitant emotional, social, and financial complications.

## The Expanding Demand for Contraceptives

The total number of contraceptive users in developing countries is estimated to have risen from 31 million in 1960-1965 to 381 million in 1985-1990. However, in some regions the increase has been greater than in others. For example, while in East Asia contraceptive users increased from 18 million to 217 million, in Africa the number increased from 2 million to 18 million (4).

Meeting the ever growing demand for methods of fertility regulation will be a major challenge for the next decade. Even without any increase in contraceptive prevalence beyond the current level, the number of contraceptive users can be expected to increase by about 108 million by the year 2000 because of a rise in the number of married women of reproductive age (5). However, according to current population projections, contraceptive prevalence in developing countries can be expected to increase to 50% an increase of 9% above the current level by the year 2000, with fertility declining to a rate of 3.3 children per woman. This would mean an increase of some 186 million

contraceptive users, making a total of about 567 million (5). The family planning services in developing countries will have to be extended to meet the needs of these couples.

### Prevalence of Specific Contraceptive Measures

Voluntary surgical sterilization, intrauterine devices (IUDs), and oral contraceptive pills are the most widely used methods, accounting for 70% of contraceptive use worldwide (6). The proportion of couples using these three methods in developing countries is much greater than the corresponding proportion in developed countries--about 81% and 43%, respectively (6).

The dramatic decline in fertility in developing countries in the past few decades has been largely achieved through the use of new contraceptive methods. Whatever factors may have influenced people's reproductive behaviour, the availability of convenient, effective, and safe modern methods has helped people to exercise their reproductive choices. The higher use of the condom in developed countries compared to developing countries may also be related to the difference between them with regard to the actual and/or perceived risk of STDs. In the developed countries awareness about STDs (though not necessarily the rates of prevalence) is generally higher than in developing countries. And since the condom protects against both STDs and pregnancy, it is used more widely in these countries.

Sterilization (both female and male) is the most commonly used method of contraception, accounting for over one-third of world contraceptive use. In most countries where data on contraceptive trends are available, the prevalence of sterilization has increased in recent years. However, like other methods, the prevalence of sterilization is unevenly distributed in the world: China and India, the two most populous countries, have more than half of the world's users of this method. In general, female sterilization is far more common than male sterilization and the gap between the two continues to widen (6).

The oral pill is an important method of contraception in a majority of countries in the world. In fact, no other method is used so widely in so many countries. However, it is an insignificant method in China and India. In recent years, the prevalence of pill use has been on the decline in most countries where data on trends are available. But this has been generally taken to mean that the number of pill users has grown more slowly than the number of users of other methods (6).

In China IUD users make up 30% of all couples using contraceptives. If China is excluded, the prevalence of IUD use in the world is estimated at 9% of all methods. In most countries with information on contraceptive trends, IUD use has increased in recent years or has remained relatively stable. Only in a few countries has the prevalence of IUD use declined. These are mostly countries where prevalence of sterilization has increased (6). With regard to the condom, it is interesting to note that Japan has by far the highest prevalence of this method: in 1986, 69% of all couples practicing contraception in that country were using the condom (6).

### Current Unmet Need

Data from Demographic and Health Surveys carried out in developing countries in the late 1980s revealed a variable unmet need for contraception, ranging from a high of 24% in sub-Saharan Africa to a low of 13% in Asia and North America. The average unmet need in 15 populations included in a recent study was estimated at 17% of currently married women (7).

Unwanted pregnancy, by any measure, is a major public health problem. Principally, it is a violation of the first basic element of reproductive health, i.e., the ability to control fertility. It subjects women to unnecessary hazards of pregnancy and childbirth or those associated with pregnancy termination. Unwanted pregnancy is also less likely to result in a successful reproductive outcome, in terms of a healthy infant and child, as it is frequently ill-timed in relation to the most desirable personal, biological, and social conditions for child-bearing (8). It is estimated that 87 million married women would start practicing contraception if their needs for spacing and limiting births could be fully satisfied. If individuals who do not live in marital unions are added, the total unmet need for contraception in developing countries outside China would be close to or in excess of 100 million (7). Figures for induced abortion provide another indication of the level of unmet need for family planning in developing countries. Not all women with unwanted pregnancy resort to induced abortion, particularly in developing countries where services are either not widely available or not permitted by the legal system. With a worldwide estimate of 36-53 million induced abortions performed each year (an annual rate of 32-46 abortions per 1000 women of reproductive age), the magnitude of the problem of unwanted pregnancy and the unmet need for family planning can be appreciated (9).

A review of current abortion laws shown that some 52 countries, with about 25% of the world's population, fall into the most restrictive category, where abortions are prohibited except when the woman's life would be endangered if the pregnancy were carried to term. Forty-two countries, comprising 12% of the world's population, have statutes authorizing abortion on broader medical grounds--e.g., to avert a threat to the woman's general health and sometimes for genetic or juridical indications such as incest or rape--but not for social indications alone or on request. Some 23% of the world's population lives in 13 countries which allow abortion for social or socio-medical indications. The least restrictive category includes the 25 countries (about 40% of the world's population) where abortion is permitted up to a certain point in gestation without requiring that specific indications be present (10).

It is estimated that out of 400,000 maternal deaths that occur each year throughout the world, as many as one-quarter to one-third may be a consequence of complications of unsafe abortion procedures (10). Unsafe abortion is one of the great neglected problems of health care in developing countries and a serious concern to women during their reproductive lives. Contrary to common belief, most women seeking abortion are married or living in stable unions and already have several children. However, in all parts of the world, a small but increas-



ing proportion of abortion seekers are unmarried adolescents: in some urban centres in Africa they represent the majority. WHO estimates that more than half of the deaths caused by induced abortion occur in South and South-East Asia, followed by sub-Saharan Africa. It should be stressed that these figures are only estimates: it has not been possible to get the true numbers because of the difficulty of distinguishing between deaths from induced abortion and those from spontaneous abortion in countries where abortion is illegal (10). The 1984 the United Nations International Conference on Population urged governments "to take appropriate steps to help women avoid abortion, which in no case should be promoted as a method of family planning, and whenever possible, provide for the humane treatment and counselling of women who have had recourse to abortion" (11).

### Safety of Fertility Regulation

In view of the major worldwide increase in the use of modern contraceptives their safety has become an important public health issue. The past two decades have witnessed a major global research effort on the safety of contraceptives. In fact, no other drugs or devices in the history of medicine have ever been subjected to such scrutiny. The Programme itself has conducted several assessments of the safety of various contraceptive, particularly in developing countries, which have resulted in landmark publications (12-15). The safety of a contraceptive method must be assessed in a context wider than the potential risks associated with the use of the methods. The effectiveness of the method in preventing unwanted pregnancies must be taken into account along with the non-contraceptive health benefits. Contraceptive effectiveness, as a factor in safety, is related to the level of risk attached to unwanted pregnancy. Non-contraceptive benefits of, for example, oral contraceptives include a decrease in the incidence of iron-deficiency anaemia, protection from the life-threatening condition of ectopic pregnancy, and a lower risk of ovarian and endometrial cancer (11-15).

The risk/benefit ratio for different contraceptive methods varies for different populations, individuals, and even for the same individual at different periods of life (16). This also emphasizes the need for a broad range of contraceptive methods to match the different safety needs. No methods of contraception can be labelled as safe or unsafe without considering the needs of situation of the user in question.

### Safe Motherhood

Data that became available in the 1980s about the magnitude of maternal mortality should have shocked the world. WHO global estimates indicate that more than half a million women die each year because of complications related to pregnancy and childbirth. All but about 3000 of these deaths take place in developing countries (17). The disparity between maternal death rates in developing and developed countries is greater than for any other common category of death. Moreover, maternal mortality should be looked upon as just the tip of an iceberg of maternal morbidity, suffering, and ill-health. Quite rightly, the situation has been described by some as the "scandal of all times." Apart from maternal mortality rate, the number of pregnancies and deliveries that the woman goes through determines her lifetime risk of maternal death. In some parts of

rural Africa, this risk can be as high as one in 20. In Europe, it is low at one in several thousand. Family planning to prevent unwanted pregnancies saves lives. World Fertility Survey data have been used to estimate the proportion of maternal deaths that would have been prevented if all women who did not want any more children but who were not using effective contraception had been able to prevent all their unwanted pregnancies (18). For 26 developing countries, the median proportion of deaths averted would have been 29%, with a range from 5% in the Cote d'Ivoire to 62% in Bangladesh. The median reduction in deaths would have been 17% for eight African countries, 35% for ten Asian countries, and 33% for eight Latin American countries. Taking into consideration the prevailing high levels of maternal mortality in these countries, the number of lives saved could be enormous.

### Information, Education and Communication

The development of a relevant and thorough information, education and communication (IEC) plan is a prerequisite to the successful introduction and continued use of any form of contraception. Health workers must be properly informed about the contraceptive methods that they offer, and potential users must be able to make an informed choice from the methods available. Information is given to aid patient choice, and not to persuade, press or induce a person to use a particular method. Furthermore, the decision to refuse a method offered must be based on adequate information just as much as one to accept it.

This implies an understanding not only of the effectiveness of that method, but also of the risks involved and that alternative choices possible. To achieve this objective, a variety of interpersonal and public communication must be given to training of health personnel and the production of appropriate materials. Clients who have made an informed choice of methods are more likely to be satisfied with it and, by talking about their positive experience, become the most effective means of promoting it.

### Counselling

Counselling of clients is an essential part of providing contraception and all available methods should be discussed. In reviewing contraceptive alternatives with clients, health workers should be aware of a number of factors that may be of relevance, depending on the method in question. These will include:

- (1) Subjective factors associated with the use of any services required, and the time, travel costs, pain or discomfort likely to be experienced;
- (2) The accessibility and availability of products that may have to be procured;
- (3) The advantages and disadvantages of the method;
- (4) reversibility;
- (5) the long-or-short-term effects.

Once a method has been chosen, counselling should aim to provide the client with a knowledge of the basic facts about the method that has been accepted, including:

- (1) how the method works, e.g. how an injection in the arm or buttock can act to prevent pregnancy;



- (2) the known contraindications;
- (3) the side-effects to expect.
- (4) the management of common side-effects;
- (5) the importance of returning to the provider with questions or complaints that cannot be easily answered or managed by the woman herself;
- (6) the importance of regular contact with the health care provider so that the client's health can be monitored;
- (7) what will be done during the next visit and why;
- (8) the possible delay (on average 6 months) in return to fertility after ceasing to use the contraceptive method in question .

The importance of fully and clearly spelling out known side-effects to the client cannot be overemphasized. This should be done, however, in such a way as not to alarm the client.

The health worker should be encouraged to keep some simple records of the objective side of the interview; these will be invaluable in evaluating the programme.

To encourage the client to express her concerns, simple techniques may be used, such as listening attentively when the client speaks, nodding to encourage the client to continue, paraphrasing what the client says to make it more specific but without changing its meaning, reflecting the feelings expressed by the client back to her in non-judgemental way, asking questions in such a way that the client is not simply reduced to answering "yes" or "no" and ensuring the control of the discussions is not entirely in the hands of health worker.

A valid decision to use a particular method need not be in writing for legal purposes, because choice is indicated not by a signed form, but in a freely determined conduct following adequate discussion.

### Training in Counselling

Although the techniques of good counselling may seem self evident, particular attention must be paid to these skills in any training programme. As it is more efficient to retain satisfied clients than to seek new ones, the importance of counselling should be emphasized to the health worker, who will most probably be extremely busy and more accustomed to dealing with medical matters. Staff of the appropriate level to deal comfortably with clients should be trained in counselling techniques and properly supervised by medical personnel. One of the simplest methods of training in counselling is the use of "role-playing", in which health workers take turns at playing the role of client. This can be supplemented by "modelling" of good counselling techniques.

While contraceptive users are the major target for IEC activities, there are also other audiences for whom information about a contraceptive methods are of crucial importance because of the role that they may play in the acceptance of contraceptive method or alternatively , in sabotaging its acceptability and availability. These other audiences may include the following :

- the general public;
- health decision-makers;
- husband
- contraceptive providers and other health care providers, especially general practitioners;
- Field workers of family planning or health care;
- specialized groups, including both governmental and nongovernmental agencies, concerned with health, education, religion, social welfare and social policies.

### Assessment of Information Needs

It is absolutely essential for the messages conveyed in an IEC programme to be based on the information needs of the identified target audiences. Thus potential users have information needs that differ from those of health care decision-makers and from those of the general public. Group discussion with members of the target audience is an important means of information on educational needs . Small group discussions are particularly successful for this purpose. These are conducted as open-ended conversations focused, in this case, on family planning usually 1-2 hours in length, in which all participants are encouraged to interact with one another, to comment on various topics, to ask questions of one another, and to respond to others' comments.

### Channels of Communication

Numerous methods of disseminating information can be used in an IEC programme, but the choice will depend on what is available in the country concerned . The channels of communication that can be used include the following:

- the mass media, including radio, television, cinema, newspapers, and increasingly, videos;
- printed materials developed specifically for a specific contraceptive method and relevant to local conditions including books, leaflets, posters, circulars, comic books, flip charts, etc.;
- personal communication by means of public speakers, group discussions and seminars, theatre, popular music, etc.

### Special Groups

Two groups of particular importance for the IEC process are women's organizations and other nongovernmental organizations and traditional midwives and healers. Women's organization have demonstrated great concern for women's right to make their own decisions concerning reproduction and for the provision of high quality care through the service delivery system. In many countries, these organizations can play an important role in communicating with potential acceptors of contraceptives. In many societies, traditional midwives and healers not only attend women during childbirth but also provide health care to the family, and may be the only available source of assistance on health related matters. These individuals should be identified and given the necessary information on family planning . Their cooperation and understanding are essential to the success of the family planning programme.

## Factors Affecting Availability and Acceptance

Many factors affect the availability and acceptance of contraceptives, but the acceptance will depend upon:

### Characteristics of the client

Among women who already have children, their previous experience of pregnancy and delivery may influence their decision whether or not to use contraception for family spacing or limitation. Women who have never been pregnant and who want to postpone childbearing are special cases with respect to the choice of contraceptives. Both groups need the assurance that there will be no side effects that could adversely affect future fertility. The previous experience of users with other contraceptive methods is likely to influence the acceptance of a new method.

Various socioeconomic factors, such as the client's educational level, occupation, and financial status may also affect the acceptance of a contraceptive. Other factors to be taken into account include the nature of the client's relationship with her partner, the quality of communication between them, and the degree of joint decision-making

### Characteristics of the provider

**Professional commitment.** The commitment of the health worker in the community to the use of effective and acceptable methods is essential. If national coverage is planned, the cooperation of the private sector, including pharmacists and representatives of the mass media, is useful since adverse opinions or news stories may create anxiety and opposition, both in the private sector and among the public at large.

**Attitudes and skills of health workers.** The attitudes of staffs will influence both method acceptance and continuation of use. Their communication skills include most importantly the ability to listen to and respond sympathetically to clients who have problems.

### Characteristics of the method

Clients' perception of the method's advantages and disadvantages, including its safety, effectiveness, convenience of use, cost and potential side-effects, will influence their choice. A distinction should be made between the beliefs of the client about the method and those of the provider. It is important that they should be shared and clarified.

## Informing Clients About Contraception

The three components for informing clients about contraception and their definition are shown below:

### Information

To provide facts about available methods of family planning

### Promotion

To encourage people to practice family planning

### Counselling

To assist the individual client to make an informed, voluntary, and well-considered decision about family planning

### Information

The major purpose of information activities is to provide facts that the client can use in making a decision about family planning. Accordingly, clients must be given complete, accurate, and unbiased information about the available methods of contraception. Messages that favour one method of contraception over another, or that address only the advantages of particular methods are misleading and compromise informed choice.

Family planning providers must ensure that all personnel who provide information about contraception are themselves well informed. Facts about methods, their advantages and disadvantages and their side effects should be incorporated in training programmes for doctors, nurses, field workers, counsellors, and other appropriate personnel. Staff members should also be routinely supervised to ensure that they are providing clients with accurate and complete information.

### Promotion

The major purpose of promotion or motivation is to encourage people to practice family planning. It is acceptable to promote the benefits of small families and to encourage clients to use some methods of family planning. However, urging healthy clients to use specific methods compromises voluntary choice (WFHAAVSC, 1987).

Family planning services have undertaken a variety of promotional activities. One of the most common is to use trained community workers to promote contraception; these individuals usually have other public health or family planning responsibilities, such as providing information about health services methods of contraception, distributing contraceptive or medical supplies, or accompanying clients to clinics.

More intensive education by health care providers when contraception is discussed and prescribed and closer follow-up might help adult women become more satisfied with all forms of contraception. A closer partnership between the woman and her health care provider should help the woman understand the true risks and benefit of contraception, the usual expectations of side effects, and how family planning methods can be changed to eliminate or minimize side effects. The role of the male in family planning is extremely important. At times it has received inadequate attention since many of the effective methods developed over the past twenty five years have been designed for use by females alone. Moreover, since it is the woman who must undergo the pregnancy, bear the child, nurse it, and in most instances feed it, women have had greater motivation to take control of their reproductive destiny. In the ideal situation, couples should share the choice of the contraceptive and the responsibility for its use and should together be aware of, and alert to, possible side-effects. There are a number of positive rewards for the couples that follow family planning methods. These include socioeconomic and health benefits. Family planning will allow spacing of children leading to a better health of the mother, it may allow her as well to enter the working force, in addition to giving the couple more time to build a stronger marriage. As for the children themselves, they will receive better attention, more education, and they will have better health.

A number of community groups can help in the promotional activities for family planning including:

- Non governmental organization.
- Media, newspapers, journals, TV and others.
- Local leaders of the community.
- Women and Children advocate organizations.
- Health care center
- Ministry of health
- Hospitals
- Health care team including: physicians, nurses, social workers, etc.
- Political parties and politicians
- Religious organisations and figures.

### Process of Counselling

The purpose of counselling is to assist the clients to make an informed, voluntary, well-considered decision regarding family planning. In addition to providing information about methods of contraception (filling in gaps in the client's knowledge and correcting misconceptions), the counsellor focuses on the client's decision and how it is made. Careful analysis of the community is the first step in any successful information programme. During this stage, staff should talk to clients and should examine the messages that are being circulated. Clients receive information about contraception in many ways. Some of that information may be inaccurate or incomplete.

Service managers should also examine the context in which they are communicating. They should seek to answer the following questions;

What rumours and myths exist?

What forces are at work that might make clients resist or disbelieve information about family planning.

Which sources of information does the community trust and rely upon?

What information is being presented in the newspapers, on television, and on radio?

Is family planning widely practiced in the community, or is it just beginning to be used?

Are there any laws or local customs that might restrict public discussion about family planning.?

What is the role of women in society, and how does it effect information activities about family planning?

What role do women play in making decisions about family planning?

Are other agencies already providing information about the specific contraceptive method ?

Major steps in developing an information programme about a contraceptive method (19)

1. Analysis
2. Developing a plan
3. Developing messages

4. Developing materials and activities

5. Pretesting and revising

6. Implementation

7. Evaluation

After careful analysis of the community and service context, the second step is to develop a plan. This stage is concerned with identifying the objectives and topics of the programme. Staff members select the segments of the client population that will be the target of the information programme, and then obtain additional information about these groups. The following question should be considered:

Are these potential clients literate, partially literate, or illiterate?

What languages do they speak and read?

What do they already know about family planning and the concerned contraceptive method?

What concerns, questions, and misconceptions do they have about family planning and the specific method?

Who influences their decision about family planning?

What is the desired family size?

What life values are important to the audience?

What problems are they facing?

How is counselling given?

The following activities should be part of every family planning counselling session:

Welcome the client in a friendly and helpful manner.

Ask the client to specify her family planning goals.

Determine what the client already knows about contraception.

Provide information about contraceptive methods and services as required .

Determine the client's circumstances and the factors influencing her choice of contraception.

Encourage the client to ask questions and discuss her concerns.

Correct any misconceptions regarding methods of contraception.

Help the client to make an informed, voluntary and well considered decision.

Provide more detailed information if the client selects a method.

Arrange appointments and provide for follow-up as needed.

### Social Dimensions of Reproductive Health

Patterns of contraceptive use vary in different populations. For example, while 40% of all users in Brazil and Sri Lanka use female sterilization, only 2% of Indonesian women use this method. Several factors are responsible for these variations, including, among others, emphasis on certain methods



by providers, knowledge and preferences of couples regarding contraceptives, provider-client interaction and perceptions about or actual experience with the method(s). Moreover, contraceptive use involves three distinct stages:

- a. decision to use and the selection of a method;
- b. continuation of use and
- c. switching to another method or discontinuation of contraception.

The term “dynamics of contraceptive use” refers to the complex interplay of various sociocultural and behavioural factors associated with these stages. Health workers remain a primary source of information about contraceptives in many countries. That doctors and health workers are a primary source of information about contraceptives was evident in Bangladesh, India, Kenya and Turkey. In Kenya, for example, (20) women stated that health workers’ advice had contributed greatly to the selection of methods they were using at a time of the interview. Despite the considerable expansion of contraceptive use, accessibility of family planning services remains a major problem in many countries. Distance between home and the health center was also found to be significantly related with the type of method used by couples, with relatively more women living nearer (less than one kilometer) to the health center using an IUD compared with women who lived farther away (who mainly used withdrawal).

A feature that stands out consistently in all studies is the lack of accurate or culturally sensitive information about contraceptive methods in developing countries. Health concerns and misperceptions about different methods continue to be major barriers to the adoption and continued use of contraceptives in several countries. Health concerns and ignorance about methods were the main reasons given by more than 50% of women interviewed in Kenya for not using a method. The studies also identified cultural barriers to the use of contraceptives. In India, Kenya, and Mexico, the husband was the main source of opposition to a woman’s use of contraceptives. Better educated, younger and economically well-off women were more likely to use spacing rather than permanent methods. Sterilization was much more common among the landless and among women with no education.

For policy makers and programme managers, the information on the extent of unmet need for family planning is critical. Health workers can do much to promote informed use of non-permanent methods. They can also help remove unwarranted fears about those methods. Other activities most amenable to intervention are woman’s education and quality and extent of health services. Education helps women to seek more information which enables them to make a free and informed choice which invariably leads to a prolonged satisfied use of the method.

Studies in five African countries found that there is a large gap between men’s knowledge and their use of condoms, as far fewer men use condoms than know of them. But knowledge still makes a difference, because the higher the level of knowledge, the higher the reported level of ever-use in samples

studied. In Africa, condom needs to be promoted particularly among women as an alternative family planning method in order to improve its image as a legitimate and acceptable barrier method for stable couples. In general terms, the studies found that young men’s opinions about marriage and condom use were changing in both positive and negative ways. Condom use in all countries studied was highest among younger, more educated, and more urbanized men. Young men who are influenced by urban life styles are becoming detached from tradition. Policy recommendations from these studies underscore the need for condoms to be promoted as an alternative family planning method, particularly among women in order to improve the image of condoms. . Emphasis should be placed on educating everybody about safe sex rather than focusing solely on men in high risk groups. These projects also show that across the continent, and in all contexts, more culture specific information and education regarding condoms are required.

### Status of Women and Contraception

In all societies, both sexes have assigned roles. The differences between these roles, the extent to which they are flexible or rigid, and how they influence daily life varies from culture to culture. Gender roles have considerable influence on reproductive behaviour, particularly decision making regarding fertility and contraceptive use. One study found that women who believed less in “patriarchy male dominated society” enjoyed more quality at home and tended to have fewer children. Overall, there is an association between higher socioeconomic status, more education, low patriarchal values and/or enjoyment of a higher degree of equality in the home, and greater knowledge of contraception, greater belief in autonomy of women in child-bearing decisions, and smaller family size. This shows that education of women can play a key role in the adoption of contraception.

### Systematic Introduction and Appropriate Management of Contraceptive Methods

In the introduction and management of new underutilized methods of fertility regulation into family planning programmes there is need for :

- a. generation and dissemination of information necessary for the addition of new or underutilized methods of fertility regulation into family planning programmes, particularly through the conduct of introductory trials.
- b. determination of service delivery needs and user needs when introducing fertility regulation methods, as well as the management skills and practices necessary to ensure appropriate quality of care in service delivery; and
- c. facilitation, through research on product management and establishment of standards and guidelines, of the transfer of contraceptive technologies including registration, production, and sustainability of these methods and understanding of economic implications of their introduction.



A systematic approach to the introduction of a method of family planning into a national programme is one in which the introduction is undertaken in the context of the capabilities of the service delivery system. It addresses ways of broadening a method's availability and evaluates service delivery issues, helping at the same time to improve the quality of care given to users of all methods.

Research in the existing service capabilities and method mix of a family planning programme may determine that it is appropriate to proceed with the introduction of a completely new method, such as the implantable contraceptive Levonorgestrel (Norplant), or the once-a month injectable preparation consisting of progestin-estrogen formulation. The levonorgestrel implant consists of six silicone rubber tubes filled with levonorgestrel, a progestin-only contraceptive that permeates the membrane of the capsule slowly over the course of five years. This method has an extremely low failure rate, and yet its contraceptive effect is highly reversible. It suppresses ovulation, decreases the endometrial lining and increases the thickness of cervical mucus, thus making it difficult for sperm to penetrate the cervical OS (21). The implant may be the ideal contraceptive for non compliant patients. Traditionally, contraceptives have been introduced into family planning programmes without prior research on how the new method fits in with the existing range of methods or whether the method can be delivered appropriately through the delivery system in the country. Under this new systematic approach, a method is introduced in three stages. Stage I involves a preliminary assessment of the current programme, its method mix, coverage and service infrastructure. This stage is intended to assist the programme in determining the potential role of adding new methods, the need to strengthen services for existing or underutilized methods, and the ability of the service system to cope with the addition of new methods. If the assessment leads to a decision to proceed with the introduction of a new or underutilized method, then Stage II would be implemented. This stage would include an introductory trial and associated service research projects, which would examine issues that may affect the introduction of a new method on a larger scale. Stage III entails the evaluation of this introductory trial to decide if it is appropriate to expand the use of the method to a larger scale in the programme, and if so, plan for the scaled-up activities.

It was noted that the Stage I assessment may conclude that the introduction of a new method such as (Norplant) or (Cyclofem), is appropriate. Or it may conclude that other existing or underutilized methods should be introduced or even that given the service delivery situation, introduction of any new method would be inappropriate and efforts should be made to improve the way in which currently provided methods are delivered.

The research in stage II would relate predominantly to research on the supply side of the service delivery and its determinants- i.e., factors relating to the policy and to operational managerial aspects of making the method available to the potential user (20).

## User Education, Counselling and Instruction

The success of family planning programmes depends on the quality of the relationships established between service users and service providers. The operational objectives of the most family planning programmes and the service providers concerned are to:

- gain new acceptors of family planning;
- encourage current users of contraceptives to continue planning their families through the effective use of safe methods;
- provide a reliable source of contraceptive information and supplies;
- identify and deal with complications, including unplanned pregnancies, effectively and expeditiously

While the providers of programmes relying on social marketing or social retail sales can exercise very little control over distributors at local outlets, every effort should be made to ensure that they give their customers basic information on:

- The ways in which specific contraceptives are used;
- Where to seek help should a customer experience a complication, including an unplanned pregnancy.

Each user is unique. To establish a good relationship with family planning acceptors-male and female - health workers must:

- demonstrate a caring attitude with regard to the user and her/his concerns;

Communicate relevant facts clearly and openly, taking the user's background into account;

- ensure that the user understands the necessary instructions in the use of chosen means of contraception (diaphragm, cervical cap, condom, foaming tablet, or other related means);
- keep a complete and accurate record of the client's reproductive health history so that past experience is taken into account when dealing with the present and the future.

User education, counselling, and instruction should not be seen as isolated activities, but as a vital and integral part of the process of providing family planning services and care.

The key steps in this process are as follows:

### a. Ensuring adequate supplies

Providers should place special emphasis on the methods that are most likely to be available on a continual basis and most compatible with the needs, beliefs and characteristics of the user population.

### b. Assisting in the selection of a method

This is primarily an educational process. As a result of information and motivation campaigns, usually through women's or men's groups, schools, respected peers, professional groups,

field educators, and the media (music, drama, radio, posters, travelling shows, hoardings or billboards, newspapers, or television) the client makes the first big decision for using a specific contraceptive method, i.e., one that not only can be used consistently and with common confidence, but is the least likely to produce complications or serious side effects.

Providers should assist each client in deciding what contraceptive method to use, or should recommend one. The recommendation should be based on: medical background of the client, plans for future pregnancies, living conditions, perception of family or community pressures, and the client's own preference.

#### **c. Instruction in the use of methods chosen**

After a method is chosen; the provider should review with the user how to use the method chosen; the advantages and disadvantages of the method; possible side-effects and complications associated with the use of the method; and the circumstances under which the user should return to the provider for help.

#### **d. Follow up of users**

Acceptors should be asked to return at a later date so that the staff can monitor the use of the methods chosen and offer positive support. Some family medicine providers believe it is important for the user to revisit the clinic within 3-4 weeks of starting to use a contraceptive method.

During these early follow-up visits, the provider should make sure that the user remembers the relevant danger signals.

### Research and the Future

Contraceptive research also continues to make a big difference in the lives of millions of people. Examples of benefits of continuing research include:

- reduction in doses of hormones in oral contraceptives (which has made them safer);
- development of new types of intrauterine device that are more effective and that can be used for longer durations; and
- the development of more simplified techniques for female and male sterilization (which improve their acceptability and expand their availability).

Furthermore, several new contraceptive methods are in the pipeline, including new monthly injectable methods and a hormone-releasing vaginal ring. These developments not only provide greater satisfaction and safety to existing users, the broadening of choice often also means that more new users will find a method acceptable to them.

The World Health Assembly in May 1990, "noted the worldwide mismatch between the burden of illness which is overwhelmingly in the Third World, and investment in health research which is largely focused on health problems of industrialized countries, and the fact that many developing countries lack the scientific and institutional capability to address their particular problems, especially in the critical fields of epidemiology, health policy, social sciences, nursing and management

research (22). Of particular concern is the lack of investment in contraceptive research and development in spite of the rapidly expanding need in developing countries for broader contraceptive choices and the potential impact of new contraceptive methods on reproductive health (23).

It has been estimated that less than US \$ 63 million are being spent worldwide every year on the development of new contraceptives (24). A major factor in the slowing down of research in contraceptive development has been the withdrawal of the pharmaceutical industry from this field for reasons related to development costs, liability, and a controversial political climate. Whereas in the 1970s there were 13 major pharmaceutical companies actively engaged in contraceptive research and development, of which nine were in the USA, in the 1980s their number had dwindled to four, of which only one is in the USA (25). The subject has been of sufficient concern for the US National Research Council and Institute of Medicine to issue a Committee Report in 1990 to highlight the unmet needs and to propose possible remedies (26). The report warned that "unless steps are taken now to change public policy related to contraceptive development, contraceptive choice in the next century will not be appreciably different from what it is today."

### Reproductive Health - A Global Priority

There is an urgent need for global collaboration to improve reproductive health for three reasons. First, the impact of the rise in global population transcends national boundaries. Second, action is urgently needed now as there will be a heavy penalty for inaction or delayed action. Third, the inequity in reproductive health between developed and developing countries and between men and women must be eliminated for the benefit of all.

The impact of reproductive health is not limited to the individual, family, or society at large. It extends across national boundaries to the world as a whole. The inability of individuals and couples in developing countries to regulate and control their fertility because of lack of information and inadequacy of services not only affects the health and welfare of the people immediately concerned, but also has implications for global stability and for the balance between population and natural resources.

There is such urgency about the need for immediate action that the 1990s may turn out to be a most decisive decade in the history of mankind. Action or inaction in the next ten years will decide the final number of people and their fate on board spaceship earth. The United Nations has made two projections for the world population. The difference between the two is almost the size of the current world population. About 90% or more of this increase will be in the south, in countries least capable to cope with these large numbers.

Inequity on reproductive health is the third compelling reason for international cooperation. There is no area of health in which inequity is as striking as in reproductive health (27). The differences in mortality rates in different parts of the world show that while the crude death rate is about 10%

more in the less developed than in the more developed regions, the infant mortality rate is almost six times higher, the child mortality rate is seven times higher, and the maternal mortality rate is fifteen times higher (28) (Table 1). These mortality differentials do not reflect the full picture of inequity. Differences between countries are much more striking. There are also marked differences within countries, particularly between urban and rural areas.

International cooperation to improve reproductive health should have two major objective: mobilization of necessary resources and generation of the necessary knowledge and skills. These, together with national commitment, can change the outlook for reproductive health in the world. The Alma-Ata Declaration states: "The existing gross inequality in the health status of the people particularly between developed and developing countries, is politically, socially and economically unacceptable, and is, therefore, of common concern to all countries" .

## Resources

The world has the resources to implement the necessary strategies to improve reproductive health. It is a question of rational allocation and effective utilization and of redressing imbalances in priorities.

### The international scene

More than US \$ 50 thousand million are available in the world each year as official development assistance (ODA) (29). The DAC (Development Assistance Committee) countries account for more than 85% of this aid. As a percentage of GNP, in 1987-88 ODA accounted for 0.35% in DAC countries (ranging from 0.2% for USA to 1.10% for Norway). For most countries this is still well below the 0.7% target adopted in the United Nations. The United Nations Population Fund estimates that, although funding for population-related projects as a proportion of the total ODA rose by about 1.7% in 1985, in the next two years the level of funding fell to just below 1.1% . Overall, the total population assistance has remained remarkably stable in constant dollar terms since 1972, hovering below US\$ 500 million. A small percentage increase in ODA could dramatically increase the available resources for reproductive health.

### The national scene

International cooperation can also play a role in increasing the availability of resources at the national level, particularly by ameliorating the debt burden of developing countries and by decreasing the need for the high levels of military expenditure. The current debt situation in developing countries has reversed the North-South resource flows. According to a United Nations study, a sample of 98 developing countries transferred a net amount of US\$ 115 thousand million to developed countries between 1983 and 1988. Furthermore, the continuing flight of millions of dollars from the developing countries has made the situation much worse (30). Financial difficulties in developing countries have led to cut-backs that are particularly noticeable in the health sector.

In developing countries, the expenditure on the military is more than that on education and health combined, compared to just over half in the industrial world (30). Even in the least developed countries, spending on the military is almost equal to the amount spent on education and health combined. There are eight times more soldiers in the Third World than physicians. The total military expenditure of the Third World is estimated at almost US\$ 200 thousand million. In spite of more than 800 million people in absolute poverty in South Asia and sub-Saharan Africa, South Asia spends US\$ 10 thousand million a year on defence and sub-Saharan Africa US\$ 5 thousand million (30).

Peace efforts, through international cooperation, should free a significant proportion of military expenditure to be reallocated to other social sectors including health. The challenge facing the world in the area of reproductive health is great (30). Prophets of "doom and gloom" can easily get a following. No problem, however, is insurmountable given the resourcefulness of humankind. In joint effort we need to harness science. But COMMITMENT is the key word.

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**Table 1: Differences in mortality rates in developed and developing countries**

Crude death rate per 1000 population	Infant mortality per 1000 births	Child mortality per 1000 births	Maternal mortality per 100,000 live births
Developed countries 9.8	15	17	30
Developing countries 450	9.9	79	119
World 390	9.9	71	105

Source: Ref 27.



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