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Review Article

SITUATION ANALYSIS OF ABORTION AND RELATED SERVICES IN SOUTH EAST ASIAN COUNTRIES

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ABSTRACT

The variable picture of abortion practices and related services are evolving all over the world. The mixed socio-economic structures and geo-political differences in the south east Asian countries deserve attention on this aspect. The permissible period to terminate a viable or non-viable pregnancy and different practices for that, also reflect the functionalities healthcare facilities. We have also discussed the different types of abortions and type of abortion techniques. Unsafe abortion practices have contributed significantly in the maternal mortality ratio over decades. The litigations, administrative responsibilities, religious propagandas and maternal health have been reviewed in this, one of the most populous regions of the world.

KEY WORDS: unsafe abortion, healthcare facility, viable

BACKGROUND

The word abortion was derived from the latin word 'aboriri' which means to miscarry. In modern day abortion is defined as spontaneous or induced termination of pregnancy before the age of fetal viability. World health organisation defines abortion as termination of pregnancy before 20 weeks of gestation or a fetus born with weight <500 gms.1 With the revolution of early pregnancy diagnosis, it has been possible to diagnosis very early pregnancy. Ectopic vs intrauterine pregnancy has brought some confusion. Therefore an ad hoc international consensus group came up with the new terminology "pregnancy of unknown location – PUL".2Women may visit clinic for abortion services if there is no visible intrauterine pregnancy. Estimation of serum beta-human chorionic gonadotropin hormone and exclusion of ectopic pregnancy where absolute value >1500 IU/L is an essential component.3

Spontaneous abortion is beyond patient's control and the incidence can only be guessed roughly. The rate of spontaneous abortion is fairly constant and is roughly around 10-15%.4 However in case of spontaneous abortion final diagnosis is to be made by a repeat USG (preferably TVS) in an interval of 7-10 days.5 In the developing countries like the south Asian countries, the incidence of criminal abortion including self-afflicted abortion is high due to different socio-economical structures and values.

DISEASE BURDEN IN SOUTH EAST-ASIAN COUNTRIES AND SITUATION ANALYSIS

It is estimated that around 6 million abortions occur annually in India out of which two million are spontaneous and the rest are induced. Only 15

% of those are legal and rest are performed illegally. Unsafe abortions account for 8% of all maternal deaths in India. 60% of these are in the age group of 15-24 years.[6]

In an attempt to safeguard against indiscriminate abortion, different laws have been implemented in different south Asian countries. After introduction of Medical Termination Act (MTP) in 1972 in India, reported cases of MTP have been raised significantly. Authorised MTP centres have increased from 1877 in 1976 to 7121 in 1991. Similarly, the numbers of MTP cases have been raised from 25 reported cases in the year 1972-73 to 15.6 million cases in 2015-16 in India.[7]

Till 1997 abortion was permitted only to save the life of the mother in Pakistan. The situation changed when Commission of Inquiry for Women was appointed by the government of Pakistan, which recommended that "women's right to obtain an abortion by her own choice within the first 120 days of pregnancy be unambiguously declared an absolute right ". [8] Past time, the unmet need for family planning in Pakistan was quite high and use of contraceptive methods was not so much popular. Data retrieved from a 2012 national study focussing on abortion-care with related complications estimated that there were 2.2 million abortions in Pakistan in 2012, an annual rate of 50 per 1,000 women.[9]Earlier study demonstrated an abortion rate of 27 per 1,000 women in 2002.[10]Unfortunately, the abortion rate has likely increased substantially between 2002 and 2012. Contraceptive-use patterns and abortion rates varies among the provinces, with higher rates in Baluchistan and Sindh than in Khyber Pakhtunkhwa and Punjab.[11] Actually strategies for coping with uniformly high unintended pregnancy rates will differ among provinces.

Previously Bangladesh law has allowed abortion only to save the life of the mother.[12]The government has recognized the role of comprehensive abortion care in the eve of rapid population growth. Data from the Bangladesh Fertility Survey provides a unique framework for discussion of current attitude towards and prevalence of abortion in Bangladesh. The Bangladesh Fertility Survey (BFS) was conducted on a nationally representative sample survey where 88% of Bangladeshi women approved of abortion if the woman had conceived as a result of rape and premarital sex.[13] Danger to mother's life is a more acceptable basis for abortion in 53% cases, flowed by malformed child (30%).[14] Abortion due to economic reasons was acceptable to only 17% of women.[15] Educated couples were more liberal found to be more approving of abortion than the less educated. Around 646,600 induced abortions were conducted in Bangladesh in 2010, which indicates an annual rate of 18 abortions per 1,000 women in reproductive age.[16] The abortion rate is comparable with the national average in Dhaka and Sylhet, whereas higher than average in Rajshahi and Khulna,[17] lower than average in Chittagong and very low in Barisal.[18]The abortion rate in Bangladesh is higher than the estimated ratio for South-central Asia in 2008 (26 per 100).[19]

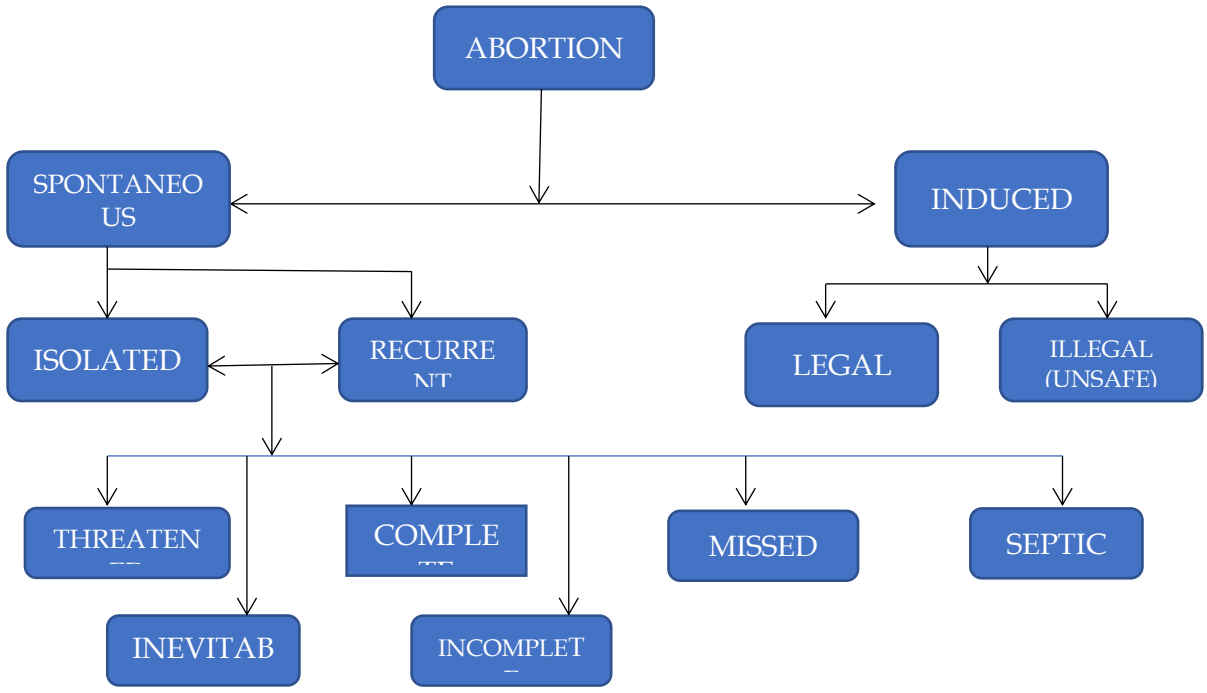
Before 2002, the law to perform abortion in Nepal was highly reserved only for saving the life of a woman. [20] Unsafe form of abortion was more common, and maternal mortality from abortion-complications was accountable for most of maternal deaths in major hospitals.[21] Honourable Supreme Court of Nepal legalised the right of women to terminate a pregnancy at up to 12 weeks of gestation on demand and up to 18 weeks of gestation where it resulted from rape or incest.[22] In the year of 2014, Nepal had 323,100 abortions out of which 137,000 were only legal, and 63,200 women were treated for abortion complications.[23]Overall the abortion rate in Nepal is 42 per 1,000 women aged 15–49 years, and the ratio is 56 per 100 live births currently.[24] The abortion rate in the Central Nepal is relatively higher which is 59 per 1,000 live birth than the national average. [25]

Inspite of nation-wide freely available contraception is in Sri Lanka, the absolute number of illegal abortions is growing on the top. In a report by Health Ministry stated that, daily over 500 abortions are being performed in Colombo.[26] Sri Lanka is restrictive on abortion law and strict enforcement which resulting avoidance in giving information by the women for abortions.[27] It is also difficult to determine the actual prevalence rate for illegal abortions. It has been estimated a decade ago that 125,000 to 175,000 abortions among which mostly are illegal, performed in a year.[28] Recently it has been reported that much higher rate of induced abortions per day amounting to 240,170 per year, contributing an

abortion ratio of 741 per 1000 live births.[29] Unfortunately illegal abortion contributes to 12.5% of all maternal deaths which is the third most common cause of maternal death in Srilanka.[30]

Afghanistan is leading with the highest birth rate in Asia. Average, an Afghan woman has approximately six children throughout the course of their reproductive lives.[31] Most of the women lack the necessary education to find out about the various methods of birth control. According to UNICEF, approximately 79 % of women in Afghanistan do not use birth control.[32] Unsafe abortions in the Maldives was evaluated in 2008 by International Planned Parenthood Federation (IPPF), which found that abortion is commonly seen amongst unmarried youth than married couples.[33] It has been also intercepted that that abortion is "a risk free procedure" which is viewed as a "safe alternative to contraception".[34] It is evident that abortion is frequently sought by young unmarried Maldivian women as a solution. Penal Code of Bhutan doesn't legalise abortion unless it is caused due to rape, mother critically ill and mentally challenged.[35,36] In the year 1999, Ministry of Health and Education regularised the "Medical Termination of Pregnancy" (MTP) as law where opinion of two medical practitioners is required. The number of abortions for medical termination is reported very low as per hospital data.[37] Strong adherence to social beliefs and women's acceptance of children born out of wedlock is an important issue. Recently increasing number of Bhutanese women are seeking unsafe abortion in the neighbouring areas of India.[38]

TYPES OF ABORTION



THREATENED ABORTION

Threatened abortion is a condition where pregnancy is so far intact but there is an obvious risk to its continuation. The presenting symptom is mainly bleeding which is followed by pain.[39] Sometimes they coincide together. Bleeding is predominantly in the form of spotting and pain is never out of proportion. Every woman with an early pregnancy, vaginal bleeding and pain should be evaluated to rule out ectopic pregnancy. Regular estimation of serum beta hcg and progesterone level and trans vaginal sonography are used to detect live fetus. Generally, half of the pregnancies

will abort but chances of abortion is less if there is fetal cardiac acvtivity.[40]Acetaminophen based analgesia will help to relieve discomfort from cramping. Bed rest is often recommended but does not improve outcome. Treatment with variant of progesterone or beta hcg may be tried.

INEVITABLE ABORTION

Abortion, where the changes have progressed to a state from where continuation of pregnancy is impossible. This is generally associated with vaginal bleeding, cervical dilatation and rhythmic uterine contraction. Infection is also associated with inevitable abortion.

INCOMPLETE ABORTION

Vaginal bleeding that follows partial or complete placental separation and dilatation of the cervical os is termed incomplete abortion. The entire product of conception is not expelled; instead, a part of it is left inside the uterine cavity. This is the commonest type met amongst women, hospitalised for miscarriage complications. TVS reveals echogenic material within the uterine cavity. ERPC (Evacuation of Retained Product of Conception) is done. Patient should be resuscitated before any active treatment is under taken. Incomplete abortion can also be managed medically by tablet Misoprostol 200 mcg vaginally every 4 hours in case of smaller intra uterine product of conception.

COMPLETE ABORTION

Expulsion of the entire product of conception en masse is called complete abortion. History of heavy bleeding, cramping and passage of tissue with fetus is common. Importantly during examination, the cervical os is closed. ATVS should be done along with beta hcg estimation for conformation.

MISSED ABORTION

Missed abortion also termed as early pregnancy failure. Early pregnancy appears to be normal with amenorrhoea, nausea and vomiting, breast changes and uterine growth. Serial beta hcg assay along with TVS should be done for confirmation of embryonic death. About 50% women with anembryonic pregnancy and 35% women with missed abortion will expel the product spontaneously within 14 days.[41] Patient can be managed medically by tablet Prostaglandin E1 (Misoprostol) 800 mcg vaginally in the posterior fornix which can be repeated after 24 hours if needed. Oral misoprostol is also effective but takes longer time compared to misoprostol given by vaginal route.[42] Misoprostol may also be used sublingually but it has greater incidence of pain, diarrhoea and fever.[43] A multi-centric trial has showed that pre-treatment with mifepristone does not increase success rate. Success rate of medical management is dependent on initial beta-hCG level (between 2000-20,000 IU/L) and gestational period less than 75 days.[44] A surgical intervention is needed sometimes if there is retained product, specifically if uterus is more than 12-week size. Vacuum aspiration, dilatation and evacuation are successful for evacuation of retained product (Zhang et al 2005). Follow up with transvaginal USG is recommended.

SEPTIC ABORTION

Any abortion associated with clinical evidences of infection of the uterus and its contents is called septic abortion. MTP Act legalising abortion by different governments has reduced the incidence of septic abortion. Septic abortion is specifically associated with rise of temperature of at least 100.4-degree F for 24 hours or more, offensive or purulent vaginal discharge and lower abdominal pain and tenderness. About 10% of abortions requiring admission to hospital are septic. In majority of cases the infection occurs following illegal induced abortion, though infection can occur in other cases as well. The microorganisms responsible are mainly Bacteroid group, Clostridium group, E. Coli, Klebsiella, Staphylococcus, Pseudomonas, Beta haemolytic Streptococcus. Mixed infection is more common. In majority (80%) the organisms are of endogenous origin. Management of clinical infection include prompt administration of broad-spectrum antibiotics. Suction evacuation is to be performed after resuscitating the patient. In severe cases intensive supportive care is essential. Prophylactic antibiotic should be given at the time of induced abortion or spontaneous abortion that requires medical or surgical intervention. Tablet Doxycycline 100 mg orally 1 hour before then 200 mg orally after surgical evacuation is

recommended by ACOG.

- From the discussion it is evident that spontaneous abortion can be of two types.

1. Isolated or sporadic
2. Recurrent

ISOLATED OR SPORADIC ABORTION

This can be of all clinical types discussed above and happens sporadically to a mother. There are many reasons. Fetal chromosomal anomalies are major causes among the fetal causes. 65% of first trimester abortions are spontaneous in nature.[45] Sporadic chromosomal errors account for 50% of all isolated first trimester abortions.[46] Chromosomal abnormalities increases with increase in maternal age. It has been found that chromosomal abnormalities are 57.2% when maternal age is less than 35 years, compared to 82.5% when maternal age is more than 35 years.[47] The significant maternal causes are infection, medical disorders like diabetes mellitus, thyroid disorders. There are some less studied associations with celiac disease (which can also cause recurrent abortion), unrepaired cyanotic disease, eating disorder like anorexia nervosa and bulimia nervosa, inflammatory bowel disease, systemic lupus erythematosus, Therapeutic doses of radiation are abortifacient although exposure to less than 5 rad does not increase the risk. Cancer survivors who were previously treated with abdomino -pelvic radiotherapy may later be at increased risk of miscarriage. First trimester (more if before 10 weeks of gestation) surgeries may increase the risk of abortion. More chances of pregnancy loss are associated with gynaecological surgeries than the procedure away from the uterus. It is advisable to postpone surgeries till second trimester if possible. [48] Laparoscopic surgeries have lesser effect on pregnancy.[49] Prophylactic injection with 17 – hydroxyl progesterone caproate should be considered. Also, oral micronized progesterone or 8% progesterone gel has also some role. Trauma may cause first trimester miscarriage. Extreme of nutrition- severe dietary deficiency and morbid obesity – are associated with increased miscarriage.[50] Obesity and increased BMI is associated with increased risk of miscarriage and recurrent abortion.[51]Miscarriage mostly related to chronic and heavy substance abuse. Alcohol is a potent teratogen.[52] Although cigarette smoking seems intuitive but unprove.[53] Excessive caffeine consumption has significant association with abortion risk.[54] Environmental toxin such as benzene has a role in abortion. Some chemicals like arsenic, lead, ethylene oxide have roles in abortion.[55]Recently DDT- dichloro diphenyl trichloro ethane has come up as an agent with excessive miscarriage in south Asian developing countries.[56] Ultrasound does not increase miscarriage rate whereas X Rays, sterilizing agents and antineoplastic drugs may cause slightly increased rate of abortion.[57]Antiphosphollipid antibodies (APLA) has a major role in abortion but it mainly causes recurrent abortion.[58]Increasing paternal age is significantly associated with increased risk of abortion.[59]

RECURRENT ABORTION

Recurrent spontaneous pregnancy loss is defined as three consecutive losses of three or more pregnancies. It affects about 1% of couples all over the world.[60] Recurrent miscarriage should be distinguished from sporadic pregnancy loss that implies intervening pregnancies that reached viability. The American society of reproductive medicine 2008 proposed that recurrent pregnancy loss be defined as 2 or more failed clinical pregnancies confirmed by either sonographic or histopathological examination. There are many causes of recurrent abortion, however only three are widely accepted: parental chromosomal abnormalities, APLA Syndrome and uterine anomalies. Parental chromosomal abnormalities account for only 2- 4% of recurrent losses. Balanced reciprocal translocations account for half of the chromosomal abnormalities (50%) Robertsonian translocations (25%) and X chromosome mosaicism – 47 XXY or Klinefelter Syndrome (12%).[61] Couple with an abnormal karyotype can be managed with IVF followed by pre implantation genetic diagnosis. Several genital tract abnormalities have been implicated in recurrent miscarriage.15% of women with three or more consecutive miscarriage will be found to have a congenital or acquired uterine anomaly (Deviwold et al, 2006). Of acquired anomalies uterine synechiae – Asherman syndrome usually results from destruction of large areas of endometrium. Uterine leiomyomas are found in

large proportion of adult women can cause miscarriage, especially if located near the placental implantation site. Congenital genital tract anomalies commonly originate from abnormal mullerian duct formation or abnormal fusion. The incidence is overall 1 in 200 women. Unicornuate, bicornuate and septate uteri are associated with recurrent pregnancy loss. Developmental anomalies were found in approximately 20% of women with recurrent pregnancy losses and 15% have recognised auto immune factors.[62] Miscarriages are more common in women with systemic lupus erythematosus. The APLA syndrome is defined by antiphospholipid antibodies formed together with various forms of reproductive losses along with increased risks for venous thromboembolism.[63] 8-12% of recurrent miscarriages are caused by endocrine factors. Examples are progesterone deficiency caused by luteal phase defect and polycystic ovarian syndrome. Overt hypothyroidism and severe iodine deficiency are well known for recurrent pregnancy loss.

INDUCED ABORTION

It is defined as medical or surgical termination of pregnancy before the time of viability.

Factor	Medical	Surgical
Invasive	Usually no	Yes
Pain	More	Less
Vaginal bleeding	Prolonged and unpredictable	Light, predictable
Incomplete abortion	More common	Uncommon
Failure rate	2-5%	1%
Severe bleeding	0.1%	0.1%
Infection rate	Low	Low
Anaesthesia	Usually none	Yes
Time involved	Multiple visits	Usually, one visit

Classification

Therapeutic Abortion:

Several diverse medical and surgical disorders that can adversely affect the condition of mother are the indicated cases for therapeutic abortion. Examples include persistent cardiac decompensation with fixed pulmonary hypertension: advanced hypertensive vascular disease, diabetes, malignancy. In cases of rape or incest most consider termination reasonable. The most common indication currently is a fetus detected with significant anatomical, metabolic or mental deformity.

Elective or Voluntary Abortion

The interruption of pregnancy before the age of viability at the request of woman without any medical reason is usually termed elective or voluntary abortion. Most abortion done today are elective and therefore it is the most commonly performed medical procedure. According to ACOG 2013 elective abortion is the legal right of woman and consider this as a medical matter between a woman and her physician.

HANDLING THE SITUATION

Techniques used for first trimester abortion
Surgical
Dilation and curettage
Vacuum aspiration
Menstrual aspiration

Medical
Prostaglandin E2, F2 alpha, and analogues via different routes
Antiprogesterones – RU-486 and epostane
Methotrexate – intramuscular and oral
Various combinations of the above

Comparison of some advantages and drawbacks of medical versus surgical abortion

SURGICAL ABORTION:

Surgical pregnancy termination includes a trans vaginal approach. Cervix should be properly prepared and dilated. Sometimes in complicated cases, laparotomy with either hysterotomy or hysterectomy may be needed.[64]

Different techniques for cervical preparation

Patient should be counselled about the possible risks and effects on future pregnancies.

Dilatation and Curettage

Transcervical approach by dilating the cervix medically or mechanically and curetting the uterine cavity to evacuate the pregnancy is done in dilatation and curettage. Curettage; either blunt or suction is recommended below 15 weeks. Complications increase after 1st trimester. Perforations, cervical laceration, infection, haemorrhages are major complications.[65]

Dilatation and Evacuation

This procedure is mainly followed when pregnancy is 16 weeks or more. Wide mechanical dilatation of cervix is achieved with metallic or hygroscopic dilator. Fetal parts are destructed and evacuated. A large bore vacuum curette is used to remove the placenta and remaining tissue after complete removal of fetus.

Dilatation and Extraction

This is similar to dilatation and evacuation except that a suction cannula is used to evacuate the intracranial contents after the delivery of the fetal parts through the dilated cervix. This procedure has been termed as partial birth abortion.

Menstrual Aspiration

This is done within 1-3 weeks after a missed menstrual period and with a positive pregnancy test result. This procedure is done by 5- or 6-mm flexible plastic Karman's cannula. This procedure is also known as menstrual induction, instant period, traumatic abortion or mini abortion. Despite the chances of missing the products it has 98% success rate.[66]

Manual Vacuum aspiration

This procedure is similar to menstrual aspiration and can be used for elective termination upto 12 weeks. It can also be used as an office procedure below 10 weeks because blood loss rises sharply between 10 and 12 weeks.[67] For pregnancy less than 8 weeks cervical ripening is usually not necessary. This technique needs a 60 ml hand operated syringe and cannula. Thevacuume produces up to 60 mm hg suction.

Hysterotomy or Hysterectomy

In case of 2nd trimester pregnancy, abortion may need hysterotomy and tubal ligation can be done in the same sitting. Sometimes hysterectomy is needed due to presence of some uterine diseases.

Medical Abortion

According to ACOG outpatient medical abortion is an acceptable alternative when pregnancy is less than 49 days of menstrual age. After this time support urgical abortion is preferable. Regimens for medical termination of early pregnancy are Mifepristone, 100- 600 mcg orally followed by Misoprostol, 200-600 mcg orally or 400-800 mcg vaginally, buccally or sublingually given immediately or up to 72 hours. It can also be performed by Methotrexate 50 mcg/ m^2 BSA intramuscularly or orally followed by Misoprostol 800 mcg vaginally in 3-7 days and can be repeated 1 week after methotrexate initially given if needed. 800 mcg Misoprostol vaginally or sublingually alone can be used and can be repeated for up to three doses.[68-70]

Complications associated with medical termination are excessive bleeding and cramping.

Midtrimester Abortion

Termination of pregnancy in 2nd trimester can be performed either by surgical or medical methods. But all the procedures are aided by pre-treatment using hygroscopic cervical dilators.

Surgical techniques

Any of the surgical methods used for termination in 1st trimester such as dilatation and curettage, dilatation and evacuation, dilatation and extraction, laparotomy, hysterotomy and hysterectomy can be used for induced abortion in second trimester.

Medical methods

These include intravenous oxytocin delivered in an isotonic solution which if used in high doses will result in second trimester abortion 80 to 90 percent of cases. Intraamniotic hyperosmotic fluid such as 20% saline and 30% urea can be used. A 20 mg prostaglandin E_2 suppository placed in the posterior vaginal fornix is an effective means of

inducing a second trimester abortion.

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