DC Dutta's

Textbook of OBSTETRICS

Including Perinatology and Contraception

Contents

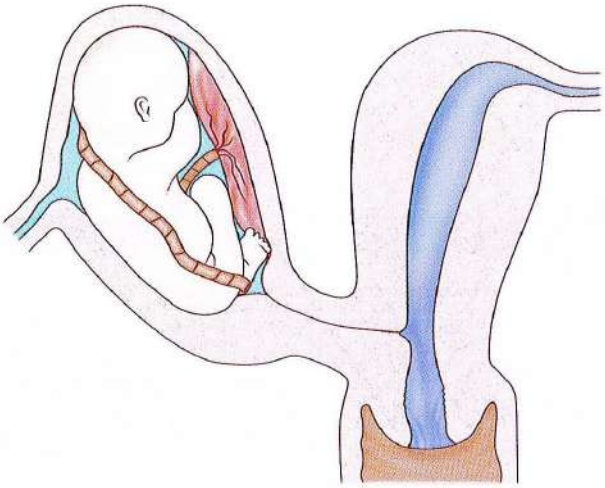


Fig. 16.15: Cornual pregnancy.

by laparoscopy/laparotomy. If the pedicle is short and the attachment is wide, hysterectomy may have to be done **(Fig. 16.15)**.

CERVICAL PREGNANCY

This is a rare (1 in 16,000 pregnancies) variant of ectopic pregnancy **when the implantation occurs in the cervical canal at or below the internal os**. Erosion of the walls by the trophoblasts occurs resulting in thinning and distension of the canal. The condition is commonly confused with cervical abortion. **In cervical pregnancy, the bleeding is painless and the uterine body lies above the distended cervix**. Intractable bleeding following evacuation or expulsion of the products brings about suspicion. The morbidity and mortality is high because of profuse hemorrhage **(Figs. 16.16A to C)**.

USG Diagnostic Criteria

(a) Uterine cavity—empty. **(b)** Cervix—barrel shaped. **(c) GS:** located below the internal OS. **(d)** Absence of **'sliding sign'** (in a case with miscarriage, when probe pressure is applied on the cervix, the gestational sac slides against the cervical canal whereas in cervical pregnancy and scar ectopic pregnancy, it does not happen so). **(e)** Increased blood flow around the GS is seen while using color Doppler.

Clinical diagnostic criteria (Rubin-1983) for cervical pregnancy are—**(a)** Soft, enlarged cervix equal to or larger than the fundus. **(b)** Uterine bleeding following amenorrhea, without cramping pain (90%). **(c)** Products of conception entirely confined within and firmly attached to endocervix. **(d)** A closed internal cervical os and a partially opened external os **(Figs. 16.16A to C). Confirmation is done by histological evidence of the presence of villi inside the cervical stroma.**

Management:

■ **Medical management:** Systemic methotrexate, local injection with KCl. ■ **Surgical management:** When bleeding is lifethreatening

Surgical procedures used are: • Dilatation and curettage. With or without adjunctive methods: • Uterine artery ligation.

- Uterine Artery Embolization (EUA)

Other procedures of management:

- Intracervical vasopressin injection.
- Hemostatic cervical sutures on the lateral aspects of the cervix (3 and 9 o'clock position).
- Folley balloon catheter to tamponade bleeding after the curettage.
- Hysteroscopic resection with UAE
- Hysterectomy.

Criteria for successful conservative management

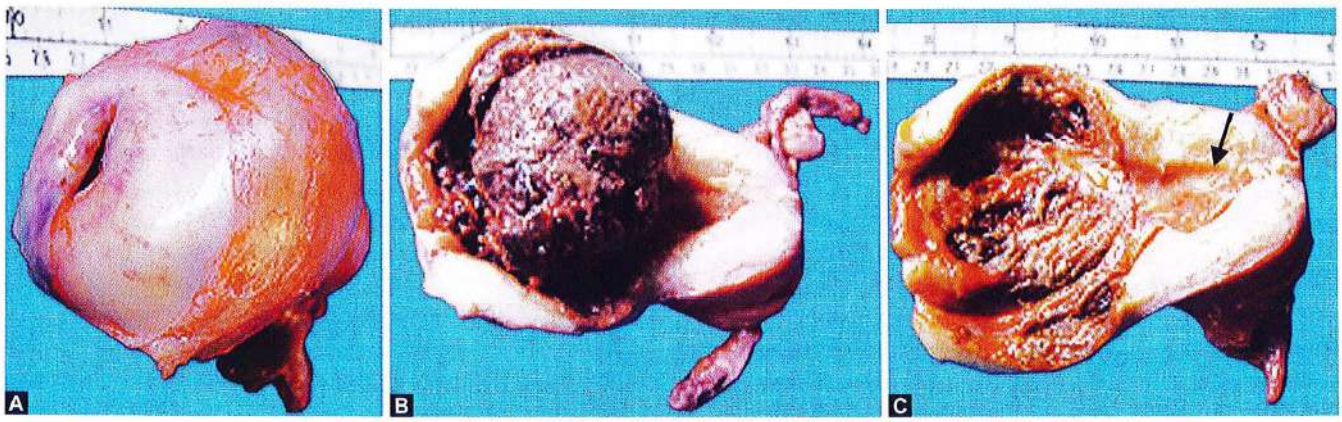
- Pregnancy <12 weeks.
- Absence of fetal cardiac activity.
- Low serum beta hCG levels.

PREGNANCY OF UNKNOWN LOCATION

No sign of either intra- or extrauterine pregnancy or retained products of conception antransvaginal ultrasound in a woman with a positive pregnancy test.

CESAREAN SCAR PREGNANCY

Cesarean scar pregnancy is defined as implantation into the myometrial defect in the site of the previous uterine scar (for cesarean delivery). Overall prevalence is 1 in 2500-3000 pregnancies. **Outcome: (a)** may continue viable pregnancy, or **(b)** may end in miscarriage within the scar.



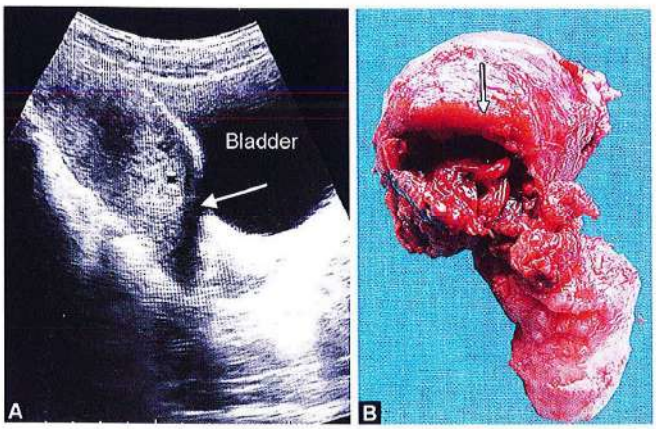
Figs. 16.16A to C: Cervical pregnancy—hysterectomy done (showing Rubin's diagnostic criteria): **(A)** Globular cervix with partially opened external os; **(B)** Uterus cut opened through the anterior wall to show the huge hemorrhagic mass occupying the cervical canal with empty uterine cavity; **(C)** When the mass was dissected, the cervical wall showed macroscopic evidence of invasion of trophoblastic tissue (confirmed on histology).

USG diagnostic criteria (Figs. 16.17A and B) (Combined TAS and TVS): **(a)** Empty uterine cavity, **(b)** GS or solid mass of trophoblast cells located anteriorly at the level of internal OS and embedded at the niche scar, **(c)** Thin or absent layer of myometrium, **(d)** Distinct vascular flow on Doppler study, **(e)** Closed endocervical canal, **(f)** Yolk sac, embryo, cardiac activity may be seen, **(g)** Negative **'slide organs'** sign.

Diagnostic features of cesarean scar pregnancy on MRI are similar to that of USG. MRI is needed when the USG diagnosis is inconclusive. Serum beta hCG level may be useful for management formulation.

Types: (a) Type 1 (endogenic)—growing towards the uterine cavity, **(b)** Type 2 (exogenic)—growing outwards. Risk of rupture and hemorrhage is high in exogenic type.

Treatment options: (a) Associated with high maternal morbidity and mortality, **(b)** Surgical rather than medical method is found most effective, **(c)** Live birth following management has been reported (though rare), **(d) Medical treatment:** Methotrexate is administered by systemic (IM) or local injection into the gestation sac. **(e) Surgical treatment:** Evacuation (S/E) or excision of pregnancy by: Open or laparoscopic or hysteroscopic method. **Additional hemostatic measures used are:** Foley catheter insertion or UAE or uterine artery ligation or hysterectomy (in advanced cases).



Figs. 16.17A and B: (A) Ultrasonographic view of cesarean scar pregnancy. Layer of myometrium is absent over the implantation site (see arrow); **(B)** Cesarean scar pregnancy (exogenic type), causing rupture and hemorrhage (see arrow).

HETEROTOPIC PREGNANCY

Intrauterine pregnancy may be co-existent with tubal or rarely with cervical or ovarian pregnancy. Diagnosis is difficult. Incidence is about 1 in 8,000 pregnancies at present. It is more common following ART procedures.

USG Diagnostic Criteria

A. Demonstration of an intrauterine pregnancy and a co-existing ectopic pregnancy,

B. A higher than expected level of serum beta hCG in relation to gestational age.

C. There may be persistently raised level of serum beta hCG even following miscarriage or termination of pregnancy.

Management options: The intrauterine pregnancy should be considered in the management plan.

Medical Management

A. **Methotrexate** can be given in a case where: **(i)** Intrauterine pregnancy is nonviable, **(ii)** Patient does not wish to continue the pregnancy.

B. **Local injection** of potassium chloride or hyperosmolar glucose with aspiration of the sac contents may be done (feticide)—**(i) Surgery:** Removal of ectopic pregnancy, if the patient is hemodynamically unstable following simultaneous resuscitation. **(ii) Expectant management:** When *heterotopic pregnancy is nonviable.*

Rhesus D (Rh D) negative women with ectopic pregnancy should be given anti-D immunoglobulin.

- **Ectopic Pregnancy**
- **An ectopic pregnancy** is one in which the blastocyst is implanted and develops outside the normal endometrial cavity.
- **The different sites** of ectopic pregnancy are: tubal (most common), ovarian, abdominal, cervical and others.
- **The common causes** of ectopic pregnancy are: salpingitis, PID, contraception failure (IUCD), tubal ligation, ART procedures and tubal surgery.
- Other **uncommon sites of ectopic pregnancy** are: (a) abdominal pregnancy, (b) ovarian pregnancy, (c) cornual pregnancy, (d) cervical pregnancy, and (e) cesarean scar pregnancy.
- **Presentation** of a women with ectopic pregnancy includes: abdominal pain, amenorrhea and vaginal bleeding.
- **Diagnosis** of ectopic pregnancy is made by: positive hCG (either in urine or serum), transvaginal sonography (no intrauterine pregnancy, fluid in the pouch of Douglas and adnexal mass) and laparoscopy/laparotomy is done for confirmation.
- **Treatment** of ecotopic pregnancy could be surgical or medical. Surgery could be done either by laparoscopy (common) or by laparotomy. Either salpingotomy or salpingectomy is done.
- **Ruptured tubal ectopic pregnancy** should be managed by simultaneous resuscitation and laparotomy and it is not resuscitation followed by laparotomy.
- **Unruptured tubal ectopic pregnancy** could be treated medically with methotrexate once the criteria are fulfilled.
- **Prospect of fertility** following an ectopic pregnancy: fertility is not adversely affected for a woman without any history of subfertility. Expectant or medical management often gives improved result compared to salpingectomy.

GESTATIONAL TROPHOBLASTIC DISEASES (GTD)

DEFINITION: Gestational Trophoblastic Disease (GTD) encompasses a spectrum of proliferative abnormalities of trophoblasts associated with pregnancy. The malignant form of GTD is referred as Gestational Trophoblastic Neoplasia (GTN).

CLASSIFICATION: Morphological classification of GTD is less important. Because at present **management is largely medical irrespective of histology. Follow-up of patients with GTD again depends on hCG than on histologic diagnosis (Box 16.6). Immunohistochemical and molecular studies are thought to be more important.**

Non-gestational trophoblastic disease occurs as a primary choriocarcinoma of the ovary and is probably a teratomatous tumor.

HYDATIDIFORM MOLE *(SYN: VESICULAR MOLE)*

TYPES: ♦ Complete ♦ Incomplete (partial)

The types are categorized on the basis of gross morphology, histopathology and karyotype **(Table 16.2). However, unless specified, molar pregnancy relates one with complete mole.**

DEFINITION: It is an abnormal condition of the placenta where there are partly degenerative and partly proliferative changes in the young chorionic villi. These result in the formation of clusters of small cysts of varying sizes. Because of its superficial resemblance to hydatid cyst, it is named as hydatidiform mole. **It is best regarded as a benign neoplasia of the chorion with malignant potential.**

INCIDENCE: There is wide range of geographical and ethnic variation of the prevalence of the condition.

Box 16.6: Classification of GTD.

- **Hydatidiform mole:** • Complete • Partial
- **Gestational Trophoblastic Neoplasia (GTN)**
- **Invasive mole**
- **Placental site trophoblastic tumor**
- **Choriocarcinoma**

Nonmetastatic disease (confined to the uterus) Metastatic disease:

A. ***Low-risk (good prognosis)***
- Disease is present <4 months duration.
- Initial serum hCG level <40,000 mIU/mL.
- Metastasis limited to lung and vagina.
- No prior chemotherapy.
- No preceding term delivery.

B. ***High-risk (poor prognosis)***
- Long duration of disease (>4 months).
- Initial serum hCG >40,000 mIU/mL.
- Brain or liver metastasis.
- Failure of prior chemotherapy.
- Following term pregnancy.
- WHO score >7.

The molar pregnancy is common in oriental countries—Philippines, China, Indonesia, Japan, India, Central and Latin America and Africa. **The highest incidence is in Philippines being 1 in 80** pregnancies and lowest in European countries 1 in 752 and USA being about 1 in 2,000. The incidence, **in India, is about 1 in 400.**

ETIOLOGY: The cause is not definitely known, but it appears to be related to the ovular defect as it sometimes affects one ovum of a twin pregnancy. However, the following factors and hypotheses have been forwarded:

- Its prevalence is highest in teenage pregnancies and in those women over 35 years of age.
- The prevalence appears to vary with race and ethnic origin.
- Faulty nutrition caused by inadequate intake of protein, animal fat could partly explain its prevalence in the oriental countries. Low dietary intake of carotene is associated with increased risk.
- Disturbed maternal immune mechanisms suggested by—**(a)** Rise in gammaglobulin level in absence of hepatic disease. **(b)** Increased association with AB blood group which possesses no ABO antibody.
- Cytogenetic abnormality: **In general, complete moles have a 46,XX karyotype (85%), the molar chromosomes are derived entirely from the father.** The ovum nucleus may be either absent (empty ovum) or inactivated which has been fertilized by a haploid sperm. It then duplicates its own chromosomes after meiosis. This phenomenon is known as **androgenesis.** Infrequently, the chromosomal pattern may be 46,XY or 45,X.
- The higher the ratio of paternal-maternal chromosomes, the greater is the molar change. Complete moles show 2:0 paternal/maternal ratio whereas partial mole shows 2:1 ratio.
- History of prior hydatidiform mole increases the chance of recurrence (1-4%).

PATHOLOGY OF HYDATIDIFORM MOLE

It is principally a disease of the chorion. Death of the ovum or failure of the embryo to grow is essential to develop complete (classic) hydatidiform mole. The secretion from the hyperplastic cells and transferred substances from the maternal blood accumulate in the stroma of the villi which are devoid of blood vessels. This results in distension of the villi to form small vesicles. The distension may also be due to edema and liquefaction of the stroma. **Vesicle fluid is interstitial fluid and is almost similar to ascitic or edema fluid, but rich in hCG.**

Naked eye appearance **(Fig. 16.18)**: The mass filling the uterus is made of multiple chains and clusters of cysts of varying sizes. **There is no trace of embryo or the amniotic sac.** Hemorrhage, if occurs, takes place in the decidual space.