Class V: Septate. Septate uterus results from failure of resorption of a septum after complete fusion of the müllerian ducts. The septum may be a combination of both fibrous tissue and muscle. The external uterine contour is normally convex, flat, or minimally indented by less than 1 cm, in contrast to that of a bicornuate uterus. Most patients evaluated for repeated abortions and found to have a uterine anomaly will have a septate uterus Metroplasty is a surgical procedure used for treatment of this anomaly and may enhance fetal survival.

Class VI: Arcuate. Arcuate uterus should be considered a normal variant, with a small indentation of the fundal endometrial canal and a normal external contour. There is no presence of septum inside the uterine cavity. It has no effect on fertility.

Class VII: Diethylstilbestrol related. Diethylstilbestrol is a synthetic estrogen that was used to prevent miscarriage in the 1940s to 1970s. Exposure of the female fetus to diethylstilbestrol results in uterine anomalies including T-shaped uterus, irregular constrictions, and hypoplasia. Diethylstilbestrol-related anomalies are associated with an increased rate of spontaneous abortions, preterm deliveries, and ectopic pregnancies.

Clinical Features

The girl with rudimentary, infantile or absence of uterus presents with primary amenorrhea. In hypoplastic uterus women may have amenorrhoea, scanty menstruation and may have infertility. In all other abnormalities of uterus, the women will have normal menstruation. Rarely there may be menorrghagia in uterine anomaly (bicornuate uterus) because of increased surface area of endometrium. In most women pregnancy may occur in either horn. There is increased chance of abortion (may be recurrent), preterm delivery, malpresentation. Occasionally rudimentary horn may obstruct labour.

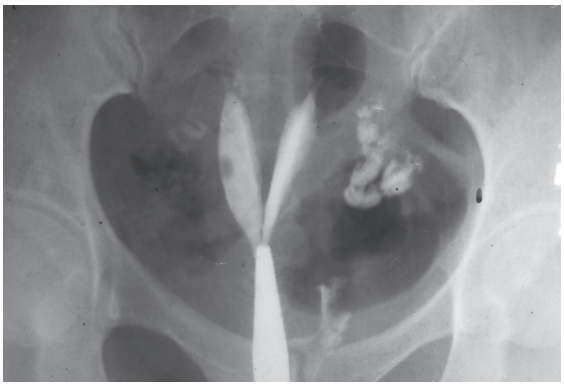

Fig. 2.4: HSG shows bicornuate uterus with patent fallopian tubes

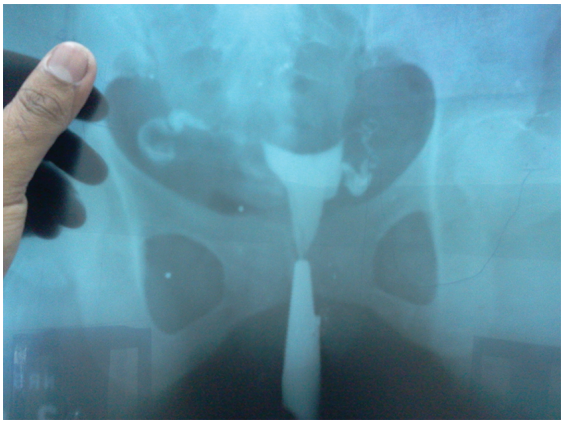

Fig. 2.5: HSG shows arcuate uterus with patent fallopian tubes

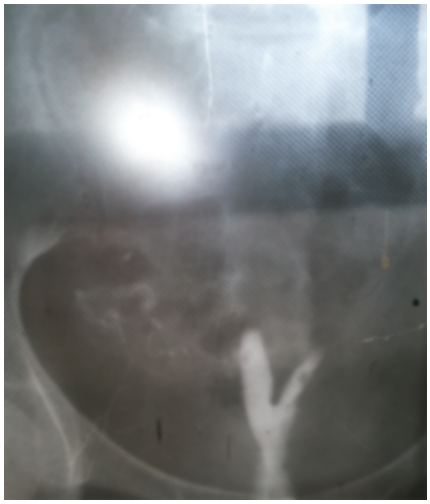

Fig. 2.6: HSG shows septate uterus with patent fallopian tubes

Cardiac examination: Heart should be examined thoroughly for apex beat, heart sounds, murmurs and click.

Pulmonary examination: Lung fields should be examined systematically for breath sounds, wheezes, ronchi and crepitations.

The Gynecological Examination

General considerations

- The gynecological examinations include examination of breasts, abdomen and pelvic examinations.
- Women are often apprehensive of pelvic examination. It is often helpful to describe the process in detail including seeing of speculum. The patient's verbal consent must be obtained prior examination.
- A female attendant should be present. Apart from providing medicolegal protection she may help in positioning of the woman.
- Patient should be asked to empty her bladder prior examination. This will help to palpate the pelvic organs easily without possible discomfort during examination.
- Patient should be properly positioned with adequate exposure under good light sourcing. However, patient's privacy should be maintained by covering the other areas apart from examination area with a sheet or Gown.
- Patient is examined standing on right side.
- Equipment required for the examination such as gloves, speculum of proper size and water soluble lubricants should be available prior hand.

Clinical pearl: *Voiding before pelvic examination helps to decrease possible discomfort and make the pelvic organ more easily palpable.*

Performance of the Gynecological Examination

Examination of breast: Breasts are inspected for asymmetry in shape, nipple inversion, bulging, and dimpling. Although size difference is common, each breast should have a regular contour. The breast is palpated with the patient seated and again with the patient supine, the ipsilateral arm above the head, and a pillow under the ipsilateral shoulder. An underlying cancer is sometimes detected by having the patient press both hands against the hips or the palms together in front of the forehead (Fig. 3.1). In these positions, the pectoral muscles are contracted, and a subtle dimpling of the skin may appear if a growing tumor has entrapped a Cooper's ligament. The nipples are squeezed to check for discharge.

The breast should be palpated with the palmar surfaces of the 2nd, 3rd, and 4th fingers, moving systematically in a small circular pattern from the nipple to the periphery. The axillary and supraclavicular lymph nodes are most easily examined with the patient seated or standing. Supporting the patient's arm during the axillary examination allows the arm to be fully relaxed so that nodes deep within the axilla can be palpated (Fig. 3.1e).

Abdominal Examination

Abdominal examination comprises inspection, palpation, percussion and if appropriate, auscultation.

Inspection

Prerequisites:

a. Bladder should be emptied (Only exception is history suggestive of stress incontinence).
b. The patient should lie flat on her back with legs extended.
c. The whole abdomen from nipple above to the saphenous openings below should be completely exposed.
d. Examination should be carried out in good light preferably in day light. Inspection to be done first from the side then tangentially and finally from either ends of bed.
e. The physician usually stands on right side.

pelvic origin, but in ovarian tumor with a long pedicle one can go below the lower margin.

Movements

a. Is the swelling movable in all directions? Uterine lump is mobile from side to side but mobility is restricted from above downwards. Ovarian lump is also freely mobile side to side but restricted from above down unless the pedicle is long. Mobility may be restricted if the lump is very large or adhesions are present surrounding the lump. A mesenteric cyst moves freely at right angle to attachment of mesentery but not so along the line (the line of attachment of mesentery is 1 inch left to midline and one inch below transpyloric plane and extending downwards and to right for about six inches).
b. Is the swelling ballotable? A renal swelling is ballotable. One hand is placed behind the loin and the other hand in front of the abdomen and the swelling is moved antero-posterior between the two hands.
c. Does the swelling move with respiration or not? Swelling associated with liver, gall bladder, spleen and stomach moves with respiration. This is up and down movement and can be tested by asking the patient to take deep breath and placing the hands over swelling.

Parietal or intra-abdominal: This can be tested by making the abdominal muscles taut by asking the patient:

1. To raise the shoulders from bed with the arms folded over the chest—rising test.
2. To raise both the extended legs from the bed—leg lifting test.

If the swelling disappears or becomes smaller when the abdominal muscles are made taut, the swelling is intra-abdominal (hand will be placed over the swelling to note this change). If the swelling is parietal, the swelling will be more prominent and freely mobile when the abdominal muscle is made taut. If the swelling is parietal but fixed to abdominal muscle the swelling will not be moveable when the muscles are made taut, e.g. desmoid tumor (recurrent fibroid of Paget) and hematoma of rectus muscle.

Is the swelling pulsatile or not? A swelling in front of abdominal aorta is pulsatile and an aneurism of abdominal aorta is also pulsatile, to differentiate between "transmitted" and "expansile" pulsatiom one may put two index fingers of each hand over the swelling. When the two index fingers are not only raised but separated the pulsation will be: "expansile" one. When the two fingers are only raised but not separated the pulsation is "transmitted".

A swelling at any of the hernia sites should be tested for expansible impulse on coughing and reducibility. These tests are positive in hernia.

Lastly palpate the liver, spleen, kidney, gallbladder, caecum and colon to ascertain relationship of the tumor with these organs.

Percussion

1. Presence of free fluid in the peritoneal cavity can be demonstrated by shifting dullness. Percussion should be started from the center of the abdomen and is carried down to one flank (Fig. 3.3). At the

Fig. 3.3: Percussion of the abdomen

as the first event. The end results of pubertal maturation are:

1. Secondary sexual development
2. The attainment of immediate capacity of reproduction
3. Attainment of adult stature.

Female Secondary Sex Characteristics

Secondary sexual development in girls involves the enlargement of the ovaries, uterus, vagina, labia, and breasts and growth of pubic and axillary hair. Puberty usually begin with breast development (8–9 yrs) as first sign. This follows a prepubertal slowing of growth kinetics. Between 11 and 14.5 years of age, the typical adolescent growth spurt takes place, and acne is frequent. Breasts usually do not grow much after 16 years. It is not uncommon of one breast to begin to grow before the other. The breasts may develop unevenly; one breast may be bigger than the other and this is normal (Fig. 4.1). If breast development has not started by 14 years of age, is abnormal and needs investigation.

Development of body hair varies greatly and depends largely on heredity. Pubic hair is usually noticeable with start of puberty (within 6 months). Axillary hair begins to grow a year or two later (12–13 yrs) With progressive increase in breast size, sexual hair, and genital development the vaginal mucosa becomes more humid, darker pink color. Whitish secretions appear as normal effect of estrogen The uterus increases in size up to stage P4 when the first menstruation occurs, and the maximal growth rate is reached.

Most girls reach menarche around 12.5 to 13 years of age; however, its occurrence may be as early as 10 or as late as 16 years of age in otherwise-normal girls.

First ovulatory cycles usually occur at a median age of 9 to 10 months after menarche. However, the time sequence in the appearance of sex characteristics may vary. Puberty is completed usually within 3 to 4 years of its onset, and the final height resulting from complete fusion of the epiphyses occurs within approximately 2 years after menarche.

Fig. 4.1: Uneven development of breast

Definitions of Puberty Terminology

Characteristic physical changes occur during puberty. These include:

1. ***Adrenarche:*** Activation of the adrenal cortex with increased production of adrenal androgens which lead to development of axillary and pubic hair.
2. ***Puberche:*** The appearance of pubic hair
3. ***Thelerche:*** The appearance of breast tissue
4. ***Menarche:*** The first menstrual bleeding

Tanner Stages

Puberty follows a fairly consistent sequence in girls. A series of predictable physical changes was noted and studied by several groups. In 1970, Dr WA Marshall and Dr JM Tanner published a landmark paper standardizing this sequence, and the series of changes have subsequently been known as the Tanner stages. Tanner stages have been developed as a way to classify the time, course, and progress of changes that occur during puberty. Girls who do not show any physical changes of puberty are at Tanner stage I. Adults who have completed puberty are at Tanner stage V. Tanner staging is done to assess both breast and pubic hair changes. The sequential stages of sexual maturity are listed below (Fig. 4.2).