

Fig. 21.54: Different types of urachal anomalies.

urachus is patent it can form—*Patent urachus (Urachal fistula)* between umbilicus and dome of the urinary bladder. *Urachal sinus* occurs when only umbilical side of the urachus remains patent. *Urachal cyst* occurs if only middle portion of the urachus remain patent with lining and fluid content. *Urachal diverticulum* occurs when bladder side of the urachus is patent (**Fig. 21.54**).

Features: Persistent discharge from the umbilicus often stained with urine if it is fistula; Recurrent infection and bleeding; Pain in the umbilicus and below; Recurrent urinary infection.

Investigations: Fistulogram to see the extent; US abdomen; Discharge analysis and culture; Urine analysis.

Umbilical Sinus

It is discharging sinus through umbilicus. It is common condition.

Causes: Persistent vitello intestinal duct towards umbilical side; persistent urachus; tuberculosis; umbilical infection or umbolith; pilonidal sinus of umbilicus; urachal malignancy.

Pain, swelling, discharge and tenderness over the umbilicus are the features. Discharge study—culture, cytology, AFB; sinusogram; CT abdomen; chest X-ray—needed investigations.

Umbilical Fistula

It is fistulous communication between umbilicus and organs in the abdomen either intestine or urinary bladder.

Causes: Patent vitello intestinal duct discharging faecal matter through umbilicus; patent urachus discharging urine; post-laparotomy; tuberculosis of abdomen either intestine or urinary bladder.

Along with discharge, pain, tenderness, excoriation is common.

Abdominal Wall Tumours

They are not uncommon but often present late as they are usually asymptomatic; Common tumours are lipoma, fibromas, neurofibromas, and fibromatosis. Malignant tumours occasionally when occurs, are either from skin or soft tissues. They may be desmoid tumour, soft tissue sarcoma like fibrosarcoma, dermatofibrosarcoma, liposarcoma, umbilical secondaries (*Sister Joseph Mary tumour*). Presentation is usually as painless progressive swelling. Often ulceration can occur. Attaining large size is also known. It is dull to percuss. On contracting the abdominal wall muscles swelling becomes prominent and less mobile. Differential diagnoses are—abdominal wall abscess, haematoma, intra-abdominal tumours (adherent to abdominal wall). US abdomen, CT abdomen is diagnostic. Biopsy is essential (**Fig. 21.55**).



Fig. 21.55: Abdominal wall large tumour. It may be Fibromatosis arising from abdominal wall.

Desmoid Tumour

It is a tumour arising from the musculoaponeurotic layer of abdomen, below the level of the umbilicus.

It is unencapsulated, hard, fibroma, presently classified under *aggressive fibromatosis*. 80% of cases occur in women, commonly after deliveries. It is common over old abdominal surgical scars (lower abdomen) may be due to old haematomas. It is often associated with the Familial polyposis colon (FAP), osteomas, odontomes, epidermal cysts (**Gardner's syndrome**). It is a slow growing tumour involving muscle and soft tissue of the abdominal wall, locally spreading, often undergoes myxomatous changes. Recurrence rate is high.

Exomphalos (Omphalocele)

It is the failure of all or a part of the gut to return to the coelomic cavity during early foetal life as coelomic cavity has not developed properly. Sac covering the content is very thin, consists of three layers—outer amniotic membrane, middle Wharton's jelly and inner peritoneal layer. Sac may get ruptured during birth.

Types: Two types:

Exomphalos minor: Here the sac is small and umbilical cord is attached to the summit, with small bowel as the content (**Fig. 21.56**).

Exomphalos major: A large defect is present with contents lying completely outside. Umbilical cord is attached to the inferior aspect of the sac. Contents are small bowel, large bowel and liver. Often the sac will rupture during delivery, which in turn leads to severe infection and high mortality. Here immediate surgery (within hours) is the only hope to save the



Fig. 21.56: Exomphalos minor.

life of the child. Omphalocele is often associated with the *congenital anomalies of the cardiac and genitourinary system* (**Fig. 21.57**).



Fig. 21.57: Exomphalos major. Note the liver, small and large bowel.

Gastroschisis (Belly Cleft)

It is a defect of the anterior abdominal wall just lateral to the umbilicus. It is common in premature babies. Umbilicus is normal. The defect is almost always to the right of an intact umbilical cord. Evisceration of the bowel develops through the defect during intrauterine life. There is no peritoneal sac and irritating effect of amniotic fluid causes chemical peritonitis with formation of thick, oedematous membrane. Non-rotation and intestinal atresia are common associations. Cardiac anomaly is not common as in omphalocele. After delivery, these infants are more prone for fluid loss, hypothermia, hypovolaemia, sepsis, metabolic acidosis. Necrotising enterocolitis is also common in such infants (20%). They are also more prone for paralytic ileus (**Fig. 21.58**).

Rectus Sheath Haematoma

Rectus abdominis muscle is supplied by superior and inferior epigastric arteries. Injury to one of these vessels will cause bleeding and haematoma in rectus sheath. Commonly it is *due to bleeding from inferior epigastric artery* in the lower abdomen.

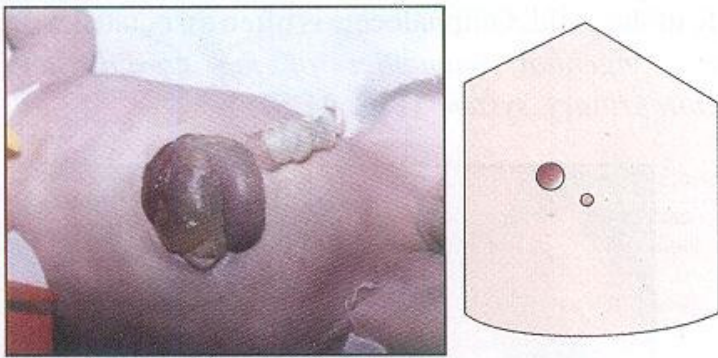


Fig. 21.58: Gastroschisis.

Causes: Trauma; surgery; spontaneous haematoma; blood dyscrasias; severe straining and exercises; tetanus and other convulsions; patients on anticoagulants; puerperium.

Features: Common in females; Sudden onset of swelling in lower abdomen, which is tender, warm, firm on one side of the abdomen. Swelling does not cross the midline; bluish discoloration is seen over the swelling; US and aspiration confirms the diagnosis; should be differentiated from other masses and parietal hernias.

Abdominal Wall Abscess

Causes: Infected haematoma; Umbilical sepsis spreading into the abdominal layers causing the abscess; Blood spread from distant focus.

Features: Tender, soft/firm, nonmobile swelling which is well localised, adherent to skin and underlying abdominal muscles. Aspiration will show pus. It should be ruled out from intra-abdominal mass, cold abscess, parietal hernia. US is diagnostic (Fig. 21.59).



Fig. 21.59: Abdominal wall abscess.

Meleney's Progressive Synergistic Bacterial Gangrene of the Abdominal Wall

It is due to infection by microaerophilic streptococci, staphylococci and other anaerobes of the postoperative abdominal or thoracic wounds. It is common in HIV, diabetic and immunosuppressed people. Sudden pain, redness, blackening and gangrene of the skin of the abdomen with abdominal wall necrosis. Toxicity, septicemia, renal failure can occur

Appendicular Mass

It is smooth or granular, firm, tender mass in the right iliac fossa. It is formed by dilated ileum, omentum, inflammatory fluid and inflamed appendix which is often adherent to the abdominal wall. It is not mobile. It does not move with respiration. It is resonant on percussion (Figs 21.60 A and B and 21.61). It is well localised mass with distinct borders. It develops 3-4 days after an attack of acute appendicitis. Commonly with conservative treatment (Ochsner Sherren regime)

MASS IN THE RIGHT ILIAC FOSSA

Parietal swellings

Abdominal wall tumour
Abdominal wall abscess
Iliac abscess, appendicular abscess extending into the abdominal wall
Actinomycosis in right iliac fossa often extending into the abdominal wall and may form discharging sinuses with sulphur granules

Intra-abdominal swellings

Appendicular mass or abscess
Carcinoma caecum
Ileocaecal tuberculosis
Amoeboma
Psoas abscess
Lymph node mass either mesenteric or external iliac lymph nodes
Bony swellings
Ectopic kidney
Undescended testis (Abdominal)
Actinomycosis



A



B

Figs 21.60A and B: Mass in the right iliac fossa.

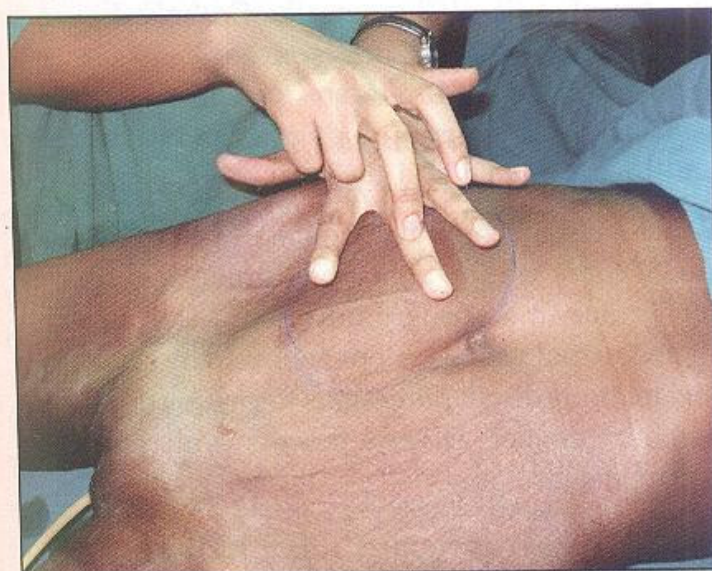


Fig. 21.61: Percussion over the mass in right iliac fossa. Retroperitoneal mass is resonant. Bowel mass is impaired resonant. Mass from abdominal wall is dull on percussion.

mass gradually reduces in size. Size of the mass should be marked out to observe the daily response. Occasionally if they don't respond for therapy, sepsis

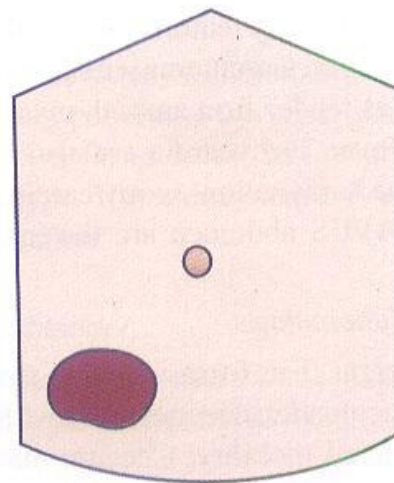


Fig. 21.62: Appendicular mass—location.

may progress leading to peritonitis or suppuration may occur causing appendicular abscess (Fig. 21.62).

Appendicular Abscess

It is smooth, *soft, tender and dull mass* in the right iliac fossa with indistinct borders. It is located on lower and outer aspect of the right iliac fossa. As pus has got tendency to come to surface in dependent position, it reflects the bowel towards periphery and so it is dull on percussion. Redness and abdominal wall oedema is evident. Appendicular abscess need to be drained surgically (Fig. 21.63).

Carcinoma Caecum

It is nodular, hard mass in the right iliac fossa. It does not move with respiration. It is mobile but mobility may be restricted once it gets adherent to psoas major muscle behind. Mass is resonant or impaired resonant on percussion. Anaemia, anorexia, loss of weight is

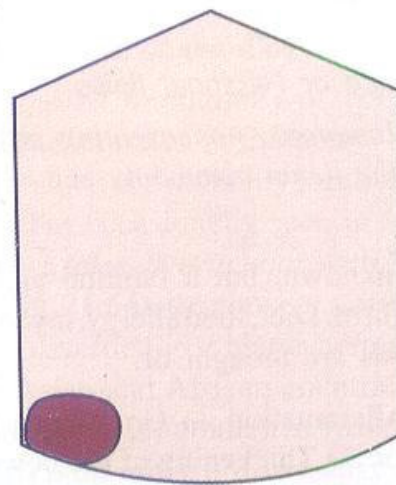


Fig. 21.63: Appendicular abscess—location.