

### DEFINITIONS

**SINUS:** Is a blind ending tract, usually lined with granulation tissue that leads from an epithelial surface into the surrounding tissue, often into an abscess cavity.

**FISTULA:** Is an abnormal communication between the lumen of one viscus and the lumen of another viscus or the body surface. In other words fistula is an abnormal communication between two epithelial lined surfaces.

It is important to distinguish between sinus and fistula, but this may not be easy, as the internal opening of a fistula may be difficult to demonstrate.

### ETIOLOGY

- **Congenital:** Arise from the remnants of embryonic ducts that persist instead of being obliterated and disappearing completely during embryonic development. E.g. preauricular sinus, umbilical fistula, urachal fistula, coccygeal fistula, sacral fistula, branchial fistula, tracheoesophageal fistula, arteriovenous fistula.
- **Acquired:** Are usually secondary to the presence of foreign body, necrotic tissue in the affected tissue, or from certain types of microbial infection, and also follows inadequate drainage of an abscess e.g. perianal abscess when burst spontaneously into the skin leading to sinus formation and when burst to both skin and anal canal leading to fistula formation. Other e.g. pilonidal sinus, suture sinus, postsurgical (abdominal or perineal), hidradenitis suppurativa, actinomycosis, tuberculosis, osteomyelitis. Arteriovenous fistula can be acquired due to trauma or operation as for hemodialysis.

### CAUSES OF PERSISTENCE OF SINUSES AND FISTULAE:

- 1) The presence of foreign or necrotic tissues, e.g. suture material or sequestrum.
- 2) Inefficient or nondependent drainage.
- 3) Unrelieved distal obstruction of the lumen of a viscus or a tube distal to the fistula.
- 4) Persistence discharge like urine, feces or CSF, this maintains continuous inflammation
- 5) Absence of rest, as in fistula in ano, due to normal contraction of the sphincter which also forces the fecal materials into the internal opening.
- 6) Epithelialization or endothelialization of the tract as in arteriovenous fistula.
- 7) Dense fibrosis, which prevents contraction and healing.
- 8) The presence of chronic inflammation as tuberculosis or actinomycosis.
- 9) The presence of malignant diseases.
- 10) Ischemia
- 11) Drugs e.g. steroids
- 12) Malnutrition
- 13) Irradiation e.g. rectovaginal fistula after radiotherapy for carcinoma of the cervix.
- 14) Interference by the patient

## **CLINICAL FEATURES**

They may be asymptomatic. However they are prone to infection, which may manifest in:

- Recurrent or persistent discharge
- Pain if there is swelling
- Constitutional symptoms if they originate from deep seated intraabdominal, pelvic, skeletal or thoracic sepsis.

## **INVESTIGATIONS**

Accurate detection of any associated deep abscess cavity or complex deep extensions of the sinus tract is paramount for successful treatment. Failure to do this will result in recurrence of the sinus either at the same site or an adjacent location.

- Evaluation of the sinus or the fistula involves bacteriological examination of the discharge, although most pathogens will be skin organisms or gut commensals, occasionally specific infections such as tuberculosis or actinomycosis may be detected.
- The sinus or the fistula should be probed gently to assess the depth, direction and presence of multiple tracts.
- If necessary a sonogram or fistulogram should be performed. This involves intubation of the sinus opening with a soft radioopaque catheter, through which a water soluble contrast media such as Hypaque is injected under image intensification; this will help to differentiate between sinus and fistula.

## **TREATMENT**

Definitive treatment depends on treatment of the cause, removal or specific management of the cause.

In general the sinus is laid open or excised and biopsy of tissue from the wall of the sinus is sent for histopathological examination. Although the vast majority of the biopsies will show granulation tissue, omission of routine pathological examination may occasionally lead to specific conditions such as malignancy or Crohns disease being overlooked, this often leads to recurrence or persistence of the sinus or the fistula.