

HERNIAS

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A hernia is a protrusion of a viscus or part of a viscus through an abnormal opening in the walls of its containing cavity. The external abdominal hernia is the commonest form, the most frequent varieties .being the inguinal, femoral and umbilical, respectively

General features common to all hernias

Aetiology

Any condition which raises intra-abdominal pressure, such as-

.A powerful muscular effort may produce a hernia-

,Whooping cough is a predisposing cause in childhood-

.Chronic cough, straining on micturition or straining on defecation in an adult-

Hernias are more common amongst smokers, which may be the result of an acquired collagen-
.deficiency increasing an individual's susceptibility to the development of hernias

.A hernia in an adult can be a sign of intra-abdominal malignancy-

Stretching of the abdominal musculature because of an increase in contents, as in obesity. Fat-
acts to separate muscle bundles and layers, weakens aponeurosis and favours the appearance of
.paraumbilical, direct inguinal and hiatus hernias

A femoral hernia is rare in nulliparous women and men, but more common in multiparous-
.women owing to stretching of the pelvic ligaments

An indirect hernia may occur in a congenital preformed sac — the remains of the processus-
.vaginalis

Peritoneal dialysis can cause the development of a hernia from a previously occult weakness or-
.enlargement of a patent processus vaginalis

Composition of a hernia

As a rule, a hernia consists of **three parts**

,The sac.1

The coverings of the sac and.2

.The contents of the sac.3

The sac

The sac is a diverticulum of peritoneum consisting of mouth, neck, body and fundus. The neck is usually well defined, but in some direct inguinal hernias and in many incisional hernias there is no actual neck. The diameter of the neck is important because strangulation of bowel is a likely complication where the neck is narrow, as .in femoral and paraumbilical hernias

The body of the sac

The body of the sac varies greatly in size and is not necessarily occupied. In cases occurring in infancy and childhood the sac is thin. In long-standing cases the wall of .the sac may be comparatively thick

The covering

Coverings are derived from the layers of the abdominal wall through which the sac .passes. In long-standing cases they become atrophied from stretching

Contents of the sac

:These can be

;Omentum = omentocele (syn. epiplocele) •

Intestine = enterocele. More commonly small bowel, but may be large •

;intestine or appendix

;A portion of the circumference of the intestine Richter's hernia •

A portion of the bladder (or a diverticulum) may constitute part of or be •

;the sole contents of a direct inguinal, a sliding inguinal or a femoral hernia

;Ovary with or without the corresponding fallopian tube •

;A Meckel's diverticulum = a Littre's hernia •

.Fluid — as part of ascites or as a residuum thereof •

Classification

.Irrespective of site, a hernia can be classified into five types

Classification of hernias

Reducible .1

Irreducible .2

Obstructed .3

Strangulated (complication of irreducible hernias) .4

Inflamed .5

Reducible hernias

The hernia either reduces itself when the patient lies down, or can be reduced by the patient or the surgeon. The intestine usually gurgles on reduction and the first portion is more difficult to reduce than the last. Omentum, in contrast, is described as doughy and the last portion is more difficult to reduce than the first. A reducible hernia imparts an expansile impulse on coughing

Irreducible hernia

Here the contents cannot be returned to the abdomen, but there is no evidence of other complications. It is usually due to adhesions between the sac and its contents or from overcrowding within the sac. Irreducibility without other symptoms is almost diagnostic of an omentocele, especially in femoral and umbilical hernias. Note: any degree of irreducibility predisposes to strangulation

Obstructed hernia

This is an irreducible hernia containing intestine which is obstructed from without or within, but there is no interference to the blood supply to the bowel. The symptoms (colicky abdominal pain and tenderness over the hernia site) are less severe and the onset more gradual than is the case in strangulation. The obstruction proceeds to strangulation if left untreated. Usually there is no clear distinction clinically between obstruction and strangulation, and the safe course is to assume that strangulation is imminent and treat accordingly.

Incarcerated hernia

The term 'incarceration' is often used loosely as an alternative to obstruction or strangulation, but is correctly employed only when it is considered that the lumen of that portion of the colon occupying a hernial sac is blocked with faeces.

Strangulated hernia

A hernia becomes strangulated when the blood supply of its contents is seriously impaired, rendering the contents ischaemic. Gangrene may occur as early as 5—6 hours after the onset of the first symptoms. Although inguinal hernia may be 10 times more common than femoral hernia, a femoral hernia is more likely to strangulate because of the narrowness of the neck and its rigid surrounds

Pathology of strangulated hernia

The intestine is obstructed and its blood supply impaired. Initially, only the venous return is impeded, the wall of the intestine becoming congested and bright red with the transudation of serous fluid into the sac. As congestion increases, the wall of the intestine becomes purple in colour. The intestinal pressure increases distending the intestinal loop and impairing venous return further. As venous stasis increases, the arterial supply becomes more and more impaired. Blood is extravasated under the serosa and is effused into the lumen. The fluid in the sac becomes blood stained and the shining serosa dull due to a fibrinous, sticky exudate. At this stage the walls of the intestine have lost their tone and become friable. Bacterial transudation occurs secondary to the lowered intestine viability and the sac fluid becomes infected

Clinical features of strangulated hernia

Sudden pain at first situated over the hernia is followed by generalised abdominal pain, colicky in character and often located mainly at the umbilicus. Nausea and subsequently vomiting ensue. The patient may complain of an increase in hernia size. On examination, the hernia is tense, extremely tender and irreducible, and there is no expansile cough impulse

Unless the strangulation is relieved by operation, the spasms of pain continue until peristaltic contractions cease with the onset of ischaemia when paralytic ileus (often the result of peritonitis) and septicaemia develop. Spontaneous cessation of pain must be viewed with caution as this may be a sign of perforation

Richter's hernia

Richter's hernia is a hernia in which the sac contains only a portion of the circumference of the intestine (usually small intestine). It usually complicates femoral and, rarely, obturator hernias

Strangulated Richter's hernia

Strangulated Richter's hernia is particularly seen as operation is frequently delayed because the clinical features mimic gastroenteritis. The local signs of strangulation are often not obvious, the patient may not vomit and, while colicky pain is present, the bowels are often opened normally or there may be diarrhoea; absolute constipation is delayed until paralytic ileus supervenes. For these reasons, gangrene of the knuckle of bowel and perforation has often occurred before operation is undertaken

Strangulated omentocele

The initial symptoms are in general similar to those of strangulated bowel. Vomiting and constipation may be absent and as the omentum, unlike intestine, can exist on a very meagre blood supply the onset of gangrene is delayed, occurring first in the centre of the fatty mass. Unrelieved, a bacterial invasion of the ischaemic contents of the sac will occur and an abscess eventually develops. In an inguinal hernia, infection usually terminates as a scrotal abscess, but extension from the sac to the .general peritoneal cavity is always a possibility

Inflamed hernia

Inflammation can occur from inflammation of the contents of the sac (e.g. acute appendicitis or salpingitis) or from external causes (e.g. the trophic ulcers which develop in the dependent areas of large umbilical or incisional hernias). The hernia is usually tender but not tense, and the overlying skin red and oedematous.
.Treatment is based on treatment of the underlying cause