

MANAGEMENT OF GROIN HERNIAS

ESSAY

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Arabic Summary	



The use of iliopectineal ligament (Cooper's Ligament) to anchor the medial parietal wall in the repair is credited to Georg Lotheissen (1868-1935) of Vienna. The use of that structure (Cooper's ligament) as an integral part of hernial repair has been popularized by Chester B. McVay of South Dakota, and the operation is known throughout the united states as McVay's repair. The importance of the posterior inguinal wall in the etiology as well as the repair of hernia was recognized relatively late. One of the strongest advocates of the transversalis fascia repair was P.W., Harrison (1883-1962).

A thickening in the trasversalis fascia layer the iliopubic tract, has received minimal attention from anatomists and surgeons alike. It was depicted by Hesselback (1914), it was described in detail in (1836) by Thomson in the past several decades, the use of this structure has been recommended by a small number of surgeons interested in the anatomy of the groin. (Clark and Hashimoto 1946; Nyhus 1964).

of the subcutaneous tissue and is usually prominent only in the region of the groin. (Condon, 1978).

Scarpa's fascia becomes thinner superiorly and then loses its identity in the subcutaneous tissues of the flank and abdomen above the level of the umbilicus.

medially it is attached to the linea alba in the midline, laterally to the crest of the ilium, inferiorly it passes over the inguinal ligament into the thigh and becomes fixed to the fascia lata. (Last, 1980).

In the region of the external inguinal ring, Scarpa's fascia has a firm attachment to the pubic tubercle lateral to the spermatic cord and just above the origin of adductor longus muscle; the fusion to bone is continued posteriorly along the ischio pubic ramus and into the perineum, where this layer is called Colles's fascia. Between the pubic tubercle and the symphysis pubis, Scarpa's fascia has no inferior attachment, the opening thus creates the abdominoscrotal passage, which serves to transmit the spermatic cord. (Condon, 1978).

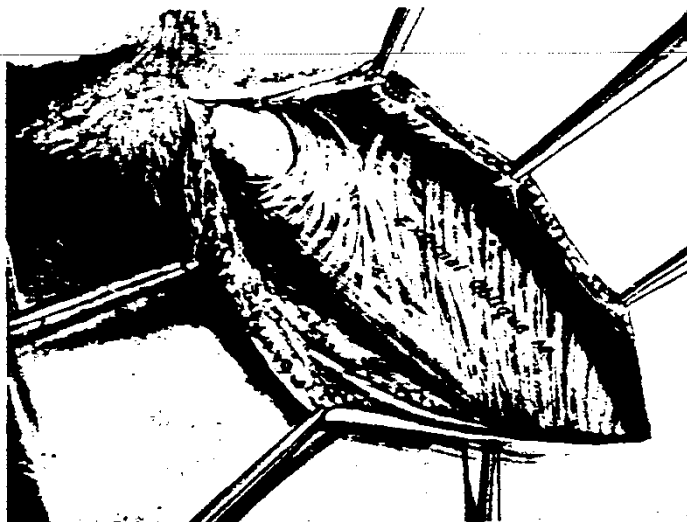
Innominate Fascia:

It is the investing sheet of fascia that covers the external oblique muscle with its aponeurosis, it is a heavy plate of fascia which is carried down on the aponeurosis of the muscle as a definite entity and can be separated as a sheet from the aponeurotic fibres (McVay, 1971).

At the margin of the superficial inguinal ring, the innominate fascia fuses with another layer of fascia which covers the posterior surface of the external oblique muscle, and both form a tubular prolongation that extends around the spermatic cord as the external spermatic fascia (Anson and Mcvay, 1971).

Muscles of the Groin:

It has to be concepted that the muscles of that region are arranged in the form of two superimposed muscular planes, near to their insertion into the pelvis. These two layers separate to allow the passage of the spermatic cord inbetween.



Anterior wall of inguinal canal.
Spermatic cord emerging from the superficial inguinal ring.
Intercrural fibres lacing across the external oblique aponeurosis.



External oblique aponeurosis divided to show internal oblique fibres with the ilio-inguinal nerve pierces its lower part. (from Last, '98').

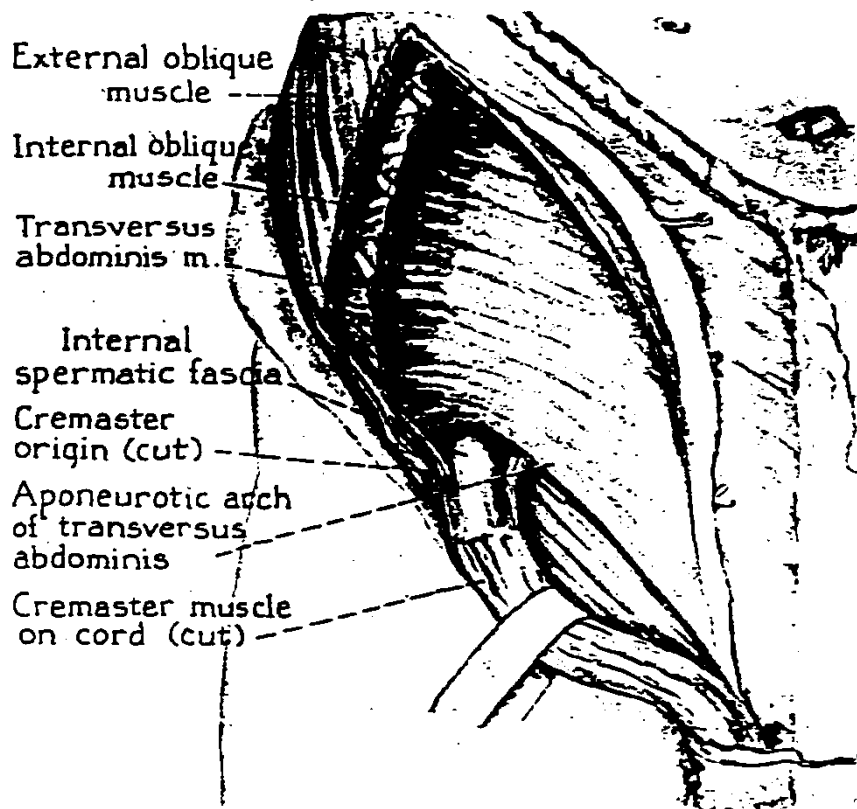
The superficial layer is made up of the external oblique muscle, while the deep one is formed by the junction of the internal oblique and transversus abdominis muscles.

The Superficial Muscular Layer "External Oblique Aponeurosis":

Is the flat tendon of insertion of the external oblique muscle which is called the external oblique aponeurosis.

It is inserted laterally into the iliac crest and anterior superior iliac spine, while medially it inserts more broadly into the linea alba.

It makes a portion of the rectus sheath only medially and does not attach to the lateral edge of that sheath. Inferiorly the aponeurosis is slightly thickened and folded back upon itself to form the inguinal ligament (Nyhus and Bombeck, 1977). At a point of variable distance above and lateral to the pubic tubercle, fibres of the aponeurosis begin to diverge to form a triangular slit or opening bounded by superior and inferior crural, this opening in the external oblique aponeurosis, corresponds to the superficial opening of the inguinal canal "The



Dissection to show the deepest of the three muscle layers of the groin. The spermatic cord has been mobilized to show the arching muscular and aponeuratic lower margin of the transversus abdominis (the transversus abdominis arch) (Condon, 1978).

The Deep Muscular Layer:-

"Internal Oblique and Transversus Abdominis Aponeuroses"

Internal Oblique Muscle and Aponeurosis:

The internal oblique muscle is mainly muscular in the inguinal region (McVay, 1971).

Its fibres run predominantly in a transverse direction where its aponeurosis proceeds medially to fuse with the aponeurosis of the transversus abdominis muscle, then at the level below the semicircular line of Douglas (one inch below the umbilicus) this fused aponeurosis forms the anterior rectus sheath then inserted into the linea alba.

In less than 5 per cent of individuals it fuses lateral to the sheath to form a conjoint tendon. That anatomical structure is more a rarity than a constant finding (Nyhus and Bombeck, 1977).

Cremaster Muscle:

It is a thin attenuated muscle derived from the lower most arching fibres of the internal oblique muscle which envelop the spermatic cord as it issues from the internal ring.

The arch forms the upper margin of the area through which inguinal hernia of all types protrude, it forms a basic component of the anatomic repair of all inguinal hernias (Nyhus and Bombeck, 1977).

The lower border of the transversus abdominis muscle forms a clearly visible curved line called the "transversus abdominis arch", that serves as an important landmark for the surgeon in case of direct inguinal hernia (Condon 1978).

The fasciae on either surface of transversus abdominis aponeurosis are carried out on the spermatic cord as the internal spermatic fascia and prolonged inferiorly on the femoral vessels as the anterior component of the femoral sheath (McVay, 1971).

endoabdominal Fascia:

It is a membranous layer which lines the abdominal cavity like a bag. Its outer aspect is in contact with muscles, aponeuroses and bones that bound the abdominal cavity, while its inner aspect is in contact with the periperitoneal or extraperitoneal layers of areolar tissue which may or may not contain fat (Last, 1980).

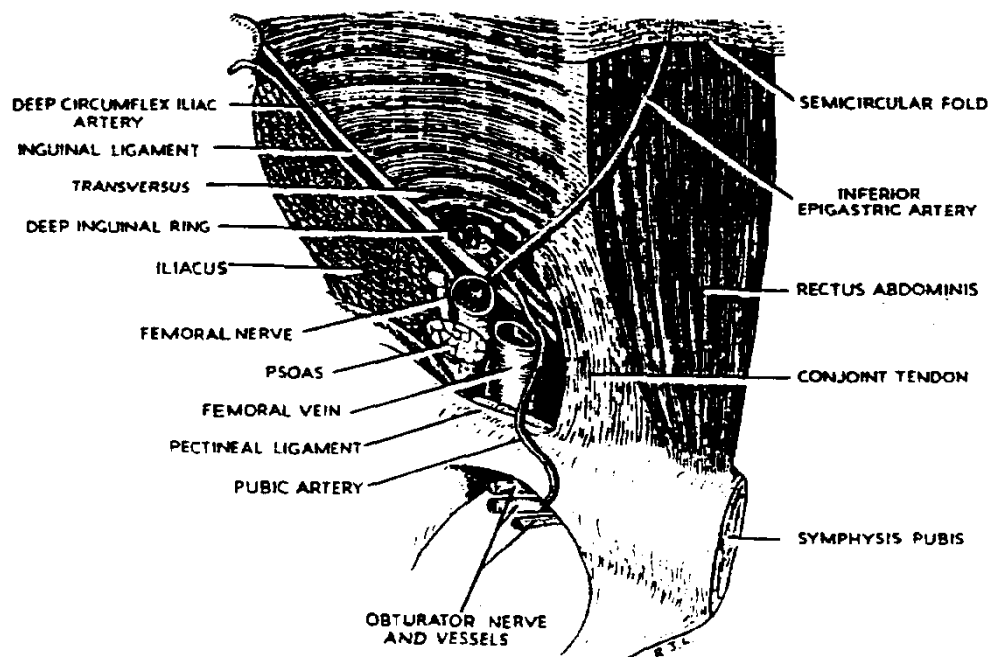
Various portions of this bag are known by different names depending upon the structure at that point. Thus endoabdominal fascia underlying the transversus abdominis muscle and its aponeurosis is known as transversalis fascia (Nyhus and Bombeck, 1977).

Transversalis Fascia:

Transversalis fascia is continuous with iliacus and psoas fascia of rectus abdominis medially and inserts into Cooper's ligament inferiorly.

However, the transversalis fascia does not simply end there, it proceeds inferiorly to become continuous with levator and obturator fascia (Nyhus, 1960).

McVay (1971) stated that, the bulk of the transversalis fascia at the lateral border of the rectus muscle splits to invest it on both surfaces and is regionally known as the rectus fascia, this fascial continuity is of very special importance in the repair of the large indirect and direct hernial defects when a relaxing incision is made, this continuity of transversalis fascia prevents herniation through the relaxing incision.



The anterior Abdominal wall viewed from within. Left side, peritoneum removed (Last, 1981).

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The transversalis fascia forms the most important layer in the prevention of groin and other abdominal herniae. It takes part in the formation of the posterior wall of the inguinal canal, this weak area in which inguinal herniae occur.

The transversalis fascia in this area is slightly thickened by a variable number of aponeurotic fibres that bridge the gap between the transversus abdominis arch above, and the Cooper's ligament and ilipubic tract below (Condon, 1978).

Nyhus (1960) suggested that the fascia transversalis is the key structure in hernia repair, since it provides the basic protection for the posterior wall of the inguinal canal.

Internal (deep) Inguinal Ring:

It is actually a hole in the transversalis fascia, and basically formed by the aponeuratic fibres of the transversus abdominis layer (Condon, 1978).

It provides a passage for the ductus deferens, the spermatic vessels supplying it and supplying the cremaster muscle, and the genital branch of the genito

portion that ordinarily closes the femoral canal and not the lacunar ligament, which is external to it. (Nyhus and Bombeck, 1977).

The iliopubic tract relates in an important manner to all types of hernias of the groin, forming the posterior boundaries of the indirect and the direct hernias, and the anterior and medial boundaries of the femoral hernia, (Gasper and Casberg, 1971).

Attention was focussed on the iliopubic tract in the modern era of hernia repair by Clark and Hashimoto (1946). Those authors demonstrated the iliopubic tract repair of the posterior inguinal wall via the anterior approach, (Condon, 1978).

Cooper's Ligament "Sup. Pubic Ligament"

McVay (1978), described this ligament as an extremely strong, tough, and fibrous ridge superimposed upon the pubic pecten, and it is to this structure that the transversus abdominis muscle is actually inserted.