

## Triangles in Surgery and its Importance [Interesting Facts]

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### ABSTRACT

The angles and triangles in surgery form a part of important association to the medical student and to the operating surgeon. They help in the identification as well as guiding us in the appropriate direction to the organ concern. Misidentification can lead to injuries. The objective is to present interesting facts about the triangles in surgery and their importance.

**Table 1:** Triangles in Surgery and its Importance

Triangle	Boundaries	Importance
<b>Scalene</b> (Gaillard F., 2019)	Anterior – Sc. anticus Posterior – Sc. medius Inferior – First rib	Subclavian a. & Trunks of brachial plexus pass through the $\Delta$ . Compression may lead to TOS.
<b>Simon's</b> (Prem Kumar A., 2018)	Anterior – RLN Posterior – Common Carotid a. Base – Inf. Thyroid artery	Aids in identification of the Recurrent laryngeal nerve.
<b>Triangle of Safety</b> (H. Elsayed <i>et al.</i> , 2010)	Anterior - Lat. border of P. major Posterior - Mid-axillary line Apex - Just below the axilla Base - Horizontal level of nipple	Most common site for Intercostal drainage.
<b>Calot's</b> (Yousef A. M. S. Hussain <i>et al.</i> , 2009)	Medial – Common Hepatic artery Lateral – Cystic duct Apex – Junction of cystic & hepatic ducts Base – Cystic artery	Cystic lymph node of 'Lund' can be identified.
<b>Passoros</b> (Join the 3 points) (Pratap <i>et al.</i> , 2022)	Junction between the head & neck of pancreas Junction of cystic duct with CBD Junction between 2nd & 3rd parts of duodenum	Most common site for Gastrinoma.
<b>Superior Lumbar</b> (Grynfelt's / Lesgaft's) (Gregory R. Lillie <i>et al.</i> , 2010)	Medial – Sacrospinalis Lateral – Post.border of Inf.oblique Above – 12th rib	Grynfelt hernia occurs here.
<b>Inferior Lumbar</b> (Petit's) (Gregory R. Lillie <i>et al.</i> , 2010)	Medial – Latissimus dorsi Lateral – Ext.oblique Below – Iliac crest	Most primary lumbar hernia occurs here.
<b>Lumbosacral <math>\Delta</math> of Marcille</b> (Singh P., 2019)	Medial – Body of 5th Lumbar vertebra Lateral – Medial border of psoas muscle Apex – Junction of psoas & body of 5th lumbar vertebra Base – Upper surface of ala of sacrum	Ureter crosses the common iliac vessels at the lateral angle of $\Delta$ .

Triangle	Boundaries	Importance
<b>Sherren's</b> (Lamtüre YR <i>et al.</i> , 2018)	Medial – Umbilicus Lateral – Ant.sup.ilic spine Base – Symphysis pubis	It is the area of hyperaesthesia in acute appendicitis.
<b>Hesselbach's</b> (Furtado M, Claus <i>et al.</i> , 2019)	Medial – Rectus sheath Lateral – Inf.epigastric artery Base – Inguinal ligament.	Differentiating Direct from Indirect hernia.
<b>Triangle of Doom</b> (Furtado M, Claus <i>et al.</i> , 2019)	Medial – Ductus deferens Lateral – Spermatic vessels Apex – Level of internal inguinal ring	Stapling to be avoided here in Laparoscopic repair of hernia to prevent damage to Ext.ilic artery & vein and Femoral nerve.
<b>Triangle of Pain</b> (Furtado M, Claus <i>et al.</i> , 2019)	Medial – Gonadal vessels Lateral – Iliopubic tract Below – Peritoneal reflection	Tacks / staplers are to be avoided here in Laparoscopic repair of hernia to prevent damage to Genitofemoral nerve & Lat.cut.nerve of thigh.
<b>Femoral</b> (Furtado M, Claus <i>et al.</i> , 2019)	Medial – Medial border of adductor longus Lateral – Medial border of Sartorius Apex – Meeting point of above two.	Femoral artery pulsations can be felt. Femoral vein is identified and suitable for IV injection in infants.

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