

Bridging the Gap: Assessing Medical Students' Inguino-Pelvic Anatomy Knowledge for Enhanced Clinical Learning

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Introduction

The emphasis of teaching the Myo-pectineal orifice (MPO) in the inguinal region was first elucidated by Henry Fruchaud in 1956 as a weak site for developing inguinal hernia. Laparoscopic hernia repair is the gold-standard approach for treating inguinal hernia. Success in performing laparoscopic inguinal hernia repair relies heavily on the understanding and navigation of key anatomical landmarks, such as structures and spaces surrounding the MPO. Hence, it’s very important that anatomical essentials must be updated to match the current trends needed for clinical practice.

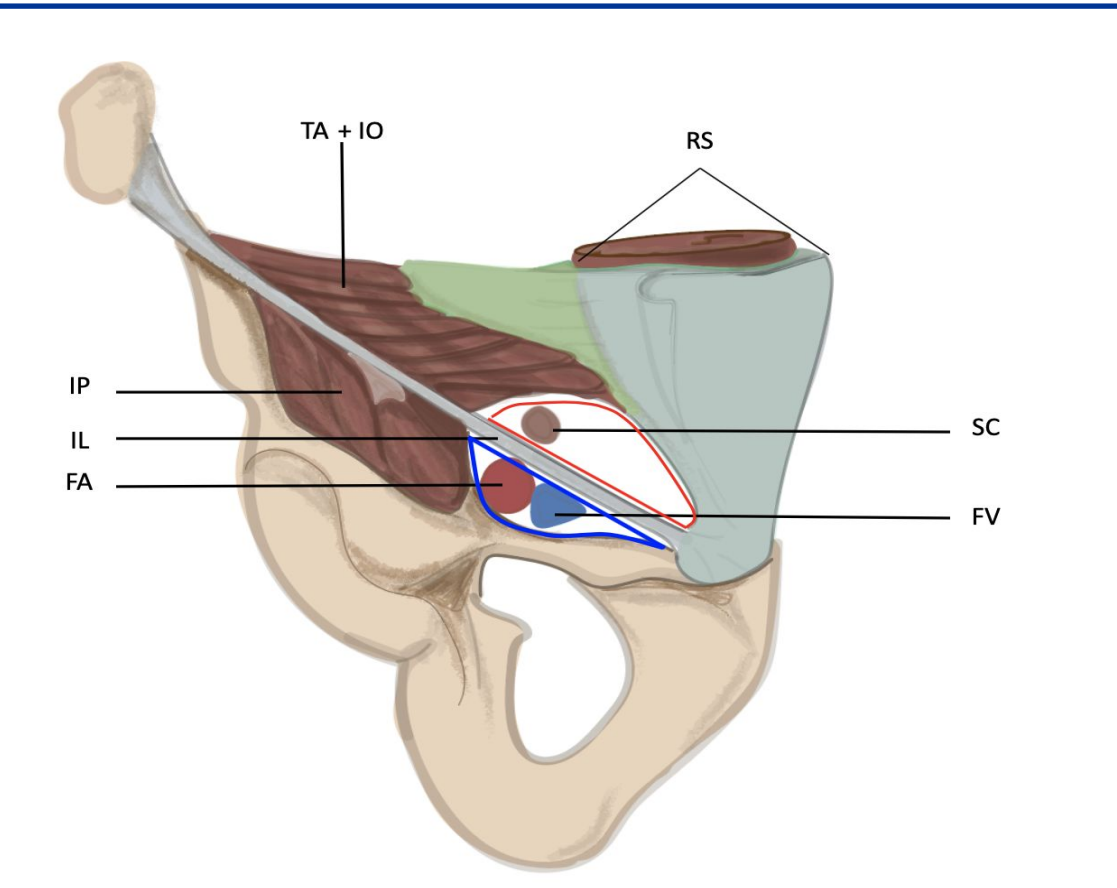


Figure 1. Illustration of Myopectineal Orifice and surrounding structures. Transversus Abdominis and Internal Oblique muscles (TA + IO), Rectus Sheath (RS), Iliopsoas Muscle (IP), Femoral Vein (FB), Testicular Vessels (TV), Femoral Nerve (FN), Internal Iliac Artery (IIA), Internal Iliac Vein (IIV), Vas Deferens (VD), Inferior Epigastric Vessels (IEV), Obturator Artery (OA), Triangle of Pain (Red), Triangle of Doom (Blue), Inguinal Triangle (Green)

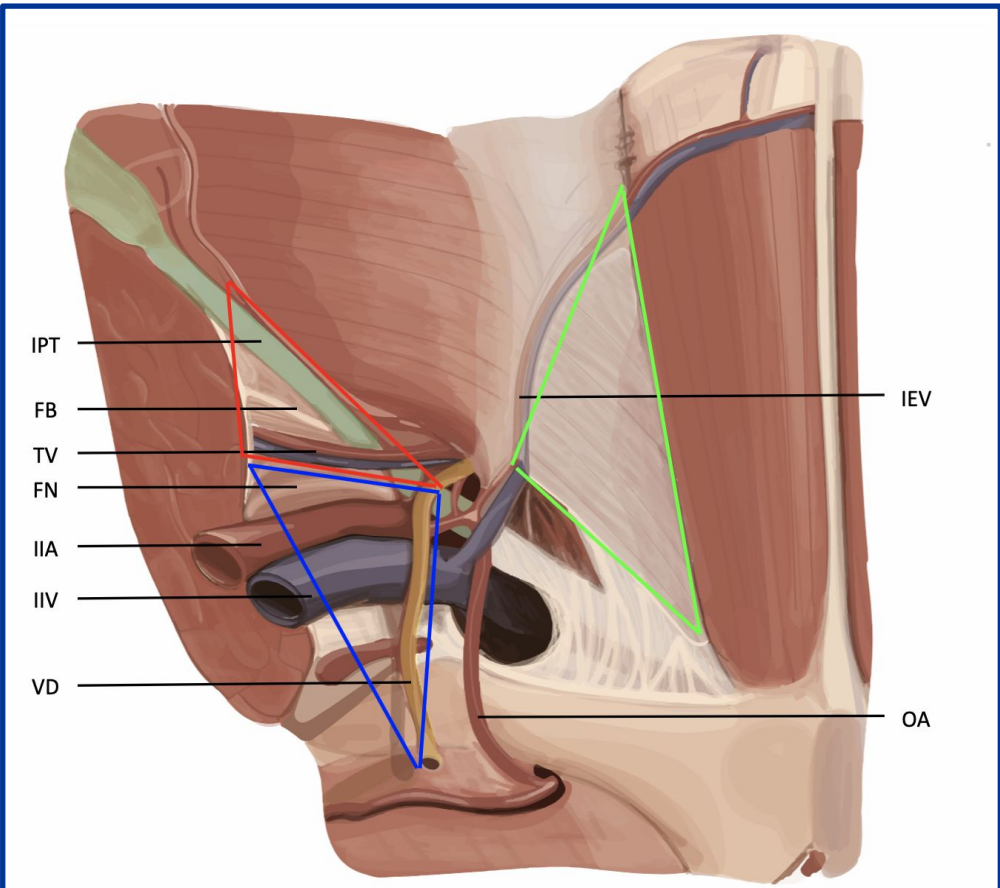


Figure 2. Illustration of posterior view of inguinal region. Iliopubic Tract (IPT), Femoral Branch of the Genitofemoral Nerve (FB), Testicular Vessels (TV), Femoral Nerve (FN), Internal Iliac Artery (IIA), Internal Iliac Vein (IIV), Vas Deferens (VD), Inferior Epigastric Vessels (IEV), Obturator Artery (OA), Triangle of Pain (Red), Triangle of Doom (Blue), Inguinal Triangle (Green)

However, these anatomical landmarks although very important for hernia repair are not adequately emphasized in the pre-clinical curriculum. Students are evaluated on the traditional anatomical landmarks of the inguinal region. In an integrated curriculum where early clinical relevance is emphasized, it is important to introduce the current anatomical concepts and terminologies early on in pre-clinical phase.

Objective

To investigate the current state of pre-clinical medical education regarding anatomical landmarks and concepts for laparoscopic IHR.

Methods

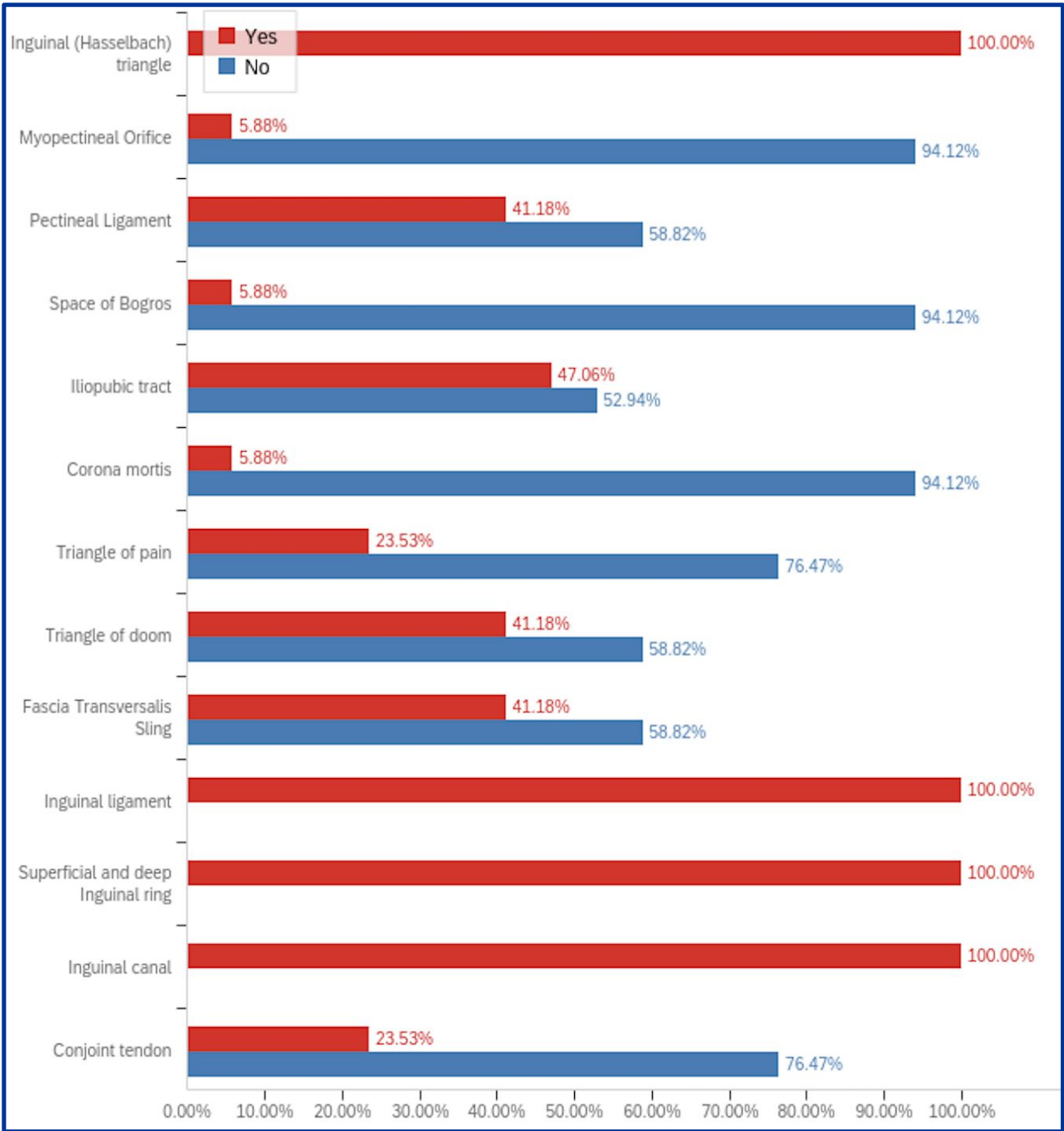
A questionnaire using Qualtrics created regarding anatomical knowledge that is pertinent to inguinal hernia repair was sent to students, anatomy faculty, and surgeons. The main purpose is to evaluate the essential anatomical knowledge of the inguinal region as applied to the clinical context as perceived by students, surgeons, and anatomy faculty.

Responses were collected from students to assess their understanding of anatomical concepts in laparoscopic inguinal hernia repair. Responses were collected from anatomy faculty, surgical attendings, and residents to obtain their expectations of preclinical students’ knowledge towards these inguinal anatomical structures.

Results

Table 1 and Figure 3. Students’ knowledge about the anatomical structures related to inguinal hernia repair.

#	Structures	Student’s awareness of the structures (Yes: ≥50% consensus)
1	Inguinal (Hasselbach) triangle	✗
2	Myopectineal Orifice	
3	Pectineal Ligament	
4	Space of Bogros	
5	Iliopubic tract	
6	Corona mortis	
7	Triangle of pain	
8	Triangle of doom	
9	Fascia Transversalis Sling	
10	Inguinal ligament	✗
11	Superficial and deep Inguinal ring	✗
12	Inguinal canal	✗
13	Conjoint tendon	



- ❖ There is a consensus among surgical faculty that all 13 structures related to inguinal hernia repair are best introduced in the pre-clinical years.
- ❖ Approximately half of the anatomical terms related to inguinal hernia repair are novel to pre-clinical medical students.

Conclusions

For future approach, integrated curriculum with an emphasis on clinically relevant anatomical structures should be implemented during the pre-clinical years. It is important that early in the curriculum, medical students learn the same anatomical structures and terminology that bring clinical and surgical relevance needed for their future journey into clinical years and residency.

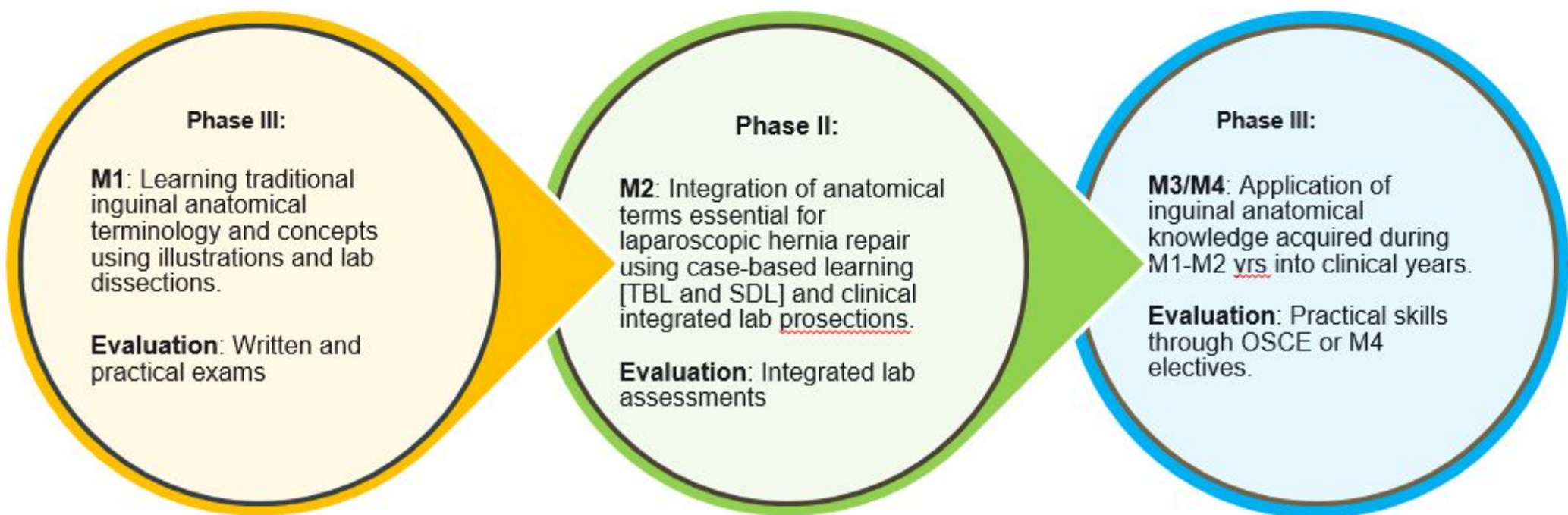


Figure 4. Anatomy Faculty’s confirmation regarding the emphasis of the anatomical inguinal structures during the pre-clinical anatomy curriculum

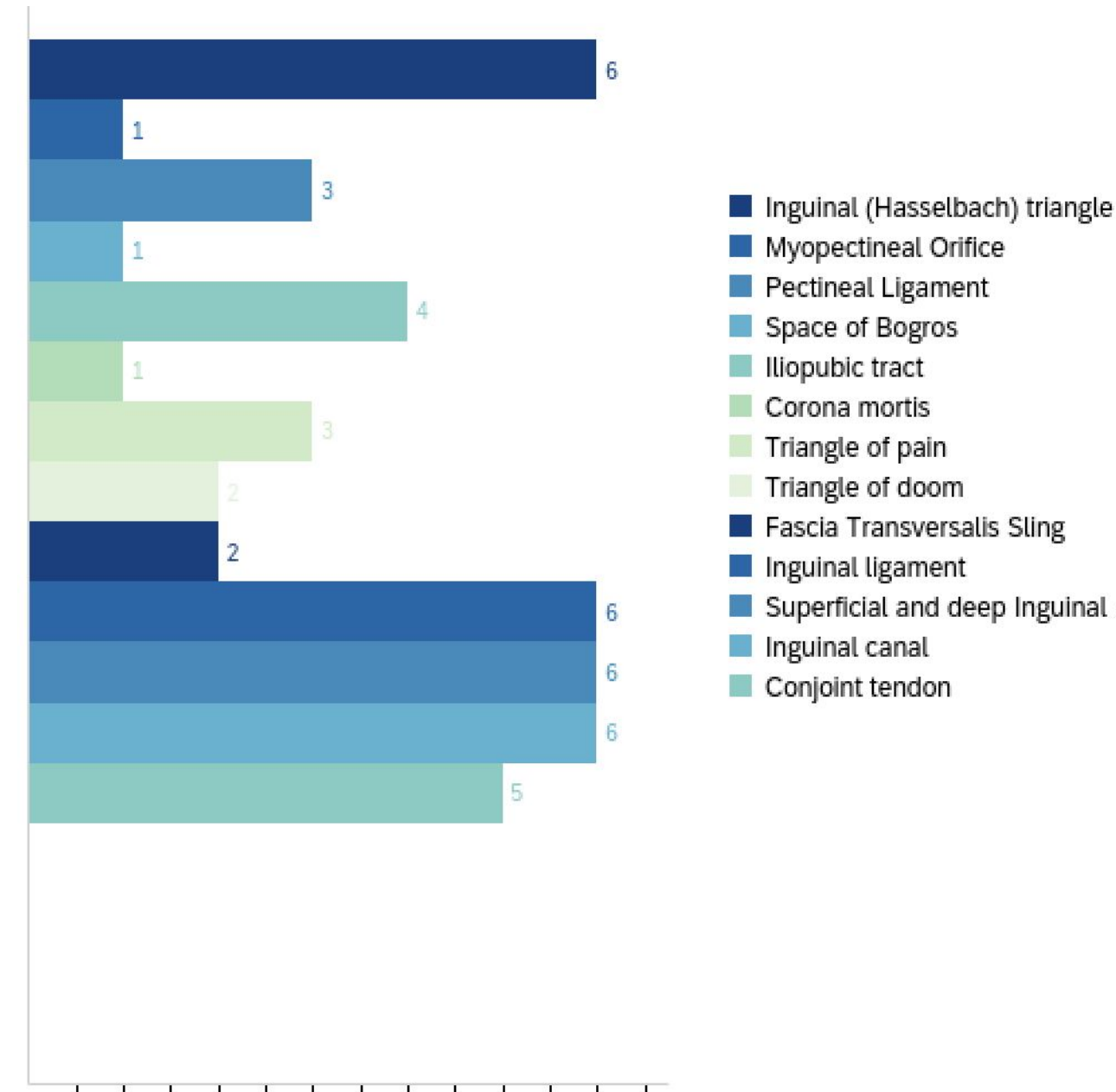
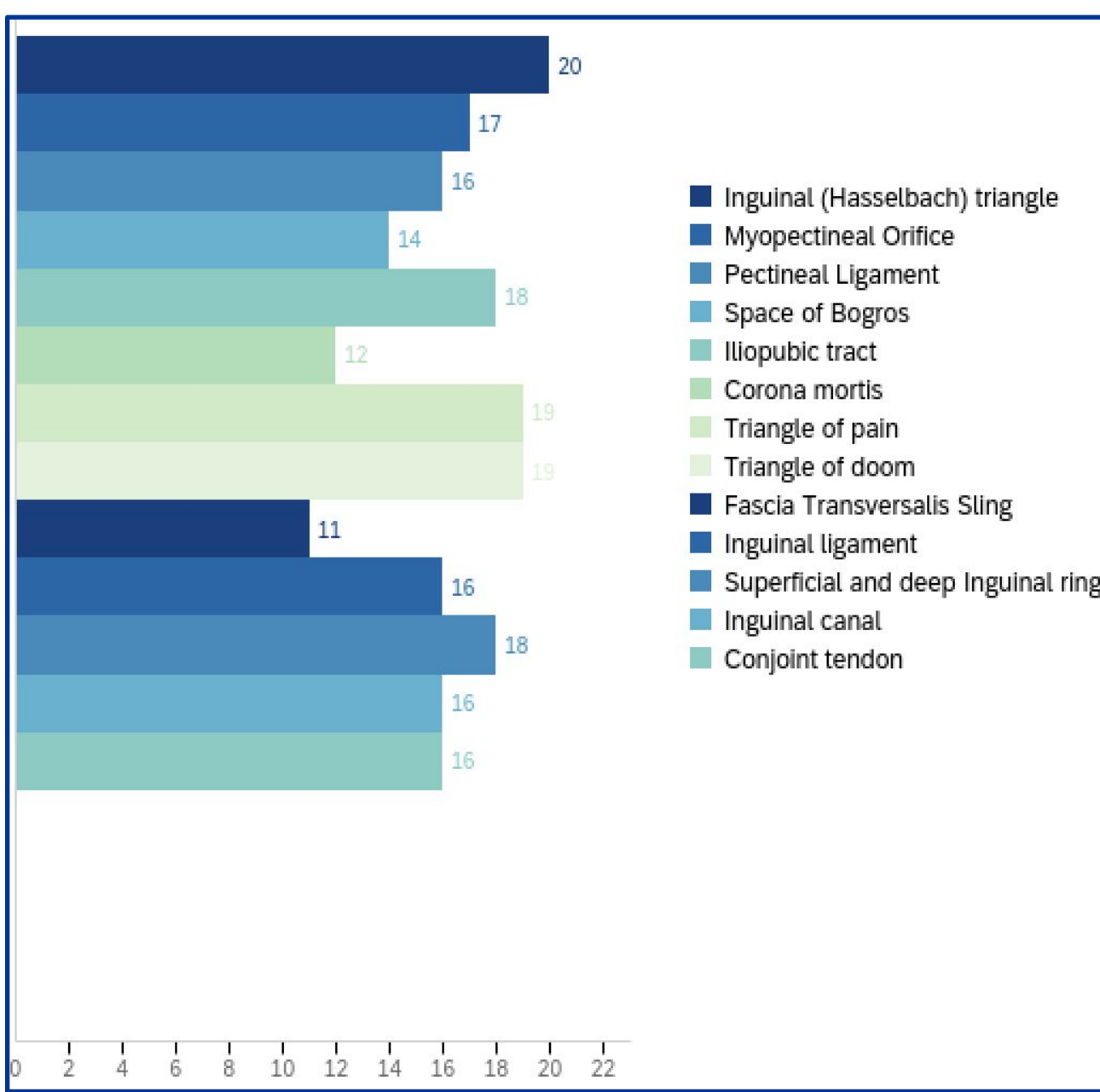


Figure 5. Surgeons’ perception of the anatomical structures pertinent to inguinal hernia repair.



Discussion

It is crucial for future physicians to understand the importance of the myopectineal orifice (MPO) when they are initially exposed to essential anatomical structures in relation to inguinal hernia repair as pre-clinical students.

References

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