

# Critical View of the Myopectineal Orifice

Jorge Daes, MD, FACS\* and Edward Felix, MD, FACS†

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Surgeons who perform minimally invasive surgery (MIS) for inguinal hernia repair are embracing new techniques, technologies, materials, and equipment at a faster pace than ever before—too fast for thoughtful evaluation of the results. Standardization remains elusive, despite many areas of consensus.<sup>1</sup> Social media, with its plethora of communications, including videos and live surgery transmission, has allowed a first-hand look at this phenomenon, with many surgeons not following proven maneuvers that make techniques safe and effective. A group of surgeons, members of the International Hernia Collaboration (IHC) Facebook Group, proposed a list of recommendations that need to be fulfilled when performing MIS inguinal hernia repair before placing the mesh regardless of the approach. These recommendations, taught separately for years and based on studies that showed fewer recurrences and complications, were consolidated under the concept of the critical view (CV) of the myopectineal orifice (MPO).

As early as 1995, technical factors such as inadequate mesh size and fixation, and missed hernias were found responsible for most recurrences.<sup>2,3</sup> In a multicenter study published in 1998, additional technical errors were identified such as inadequate lateral and medial fixation of the mesh, and missed lipoma of the cord and hernia through a slit mesh.<sup>4</sup> More recently, insufficient dissection and overlapping of the myopectineal orifice, lack of parietalization of the elements of the cord, folding of the mesh, and dislocation due to hematoma have also been cited as factors that predispose to recurrence.<sup>5,6</sup> The impact of experience on the recurrent rate has been well-documented.<sup>5–7</sup> Measures to prevent pain after the endoscopic inguinal hernia repair have been described.<sup>8,9</sup> The long learning curve of endoscopic repairs underscores the need for structured teaching and standardization of the procedure.<sup>10</sup>

The CV of the MPO is defined as the appropriate exposure of the anatomical area that must be attained before placing mesh during laparoscopic and robotic inguinal hernia repair by following the steps listed below. The term “CV of safety,” introduced by Strasberg in 1995, is now a standard practice for preventing biliary duct injury during laparoscopic cholecystectomy. Brian Jacob and the authors of this manuscript agreed to retain the term CV of the MPO and avoid eponyms, which would be unfair to so many who have contributed to the concept. The objective of the CV of the MPO concept is to teach and standardize MIS inguinal hernia repair, facilitate evaluation of videos and live surgery transmissions, reduce recurrences, prevent complications, and ultimately improve patient care.

Implementing the CV of the MPO concept through education and urging its documentation in operative reports will help standardize MIS inguinal hernia repair and facilitate teaching and evaluation of techniques.

The 9 steps to establish a CV of the MPO are as follows:

1. Identify and dissect the pubic tubercle across the midline and Cooper ligament (CL). For large, direct hernias, extend the dissection to the contralateral CL.
2. Rule out a direct hernia. Visualize anatomy through the inflated balloon during totally extraperitoneal and extended totally extraperitoneal repairs to detect a direct hernia before dissection. Remove unusual fat in the Hasselbach triangle.
3. Dissect at least 2 cm between CL and the bladder to facilitate flat placement of the medial and inferior edge of mesh toward the space of Retzius, thereby avoiding mesh displacement caused by bladder distention.
4. Dissect between CL and the iliac vein to identify the femoral orifice and rule out a femoral hernia.
5. Dissect the indirect sac and peritoneum sufficiently to parietalize the cord's elements. This step is often not completed, especially in a small surgical field. To ensure compliance with this requirement, continue to dissect until the cord's elements lie flat. Then, visualize the psoas muscle and iliac vessels, pull the sac and peritoneum upward without triggering movement of the cord's elements, and dissect between the cord's elements to avoid missing a tail of the sac.
6. Identify and reduce cord lipomas (which may appear small and unimportant until reduced). Usually lateral to the cord's elements, they should not be confused with lymph nodes (which are generally spared). Most lipomas do not require removal, but should be placed above the mesh to help prevent mesh rolling upward.
7. Dissect peritoneum lateral to the cord's elements laterally beyond the anterosuperior iliac spine (ASIS), sweeping it back inferiorly well behind the mesh's inferior border.
8. Perform the dissection, provide mesh coverage, and ensure that mesh and mechanical fixation are placed well above an imaginary inter-ASIS line and any defects, thereby avoiding recurrence and nerve injury, especially to the ilioinguinal nerve.
9. Place the mesh only when items 1 to 8 are completed and hemostasis has been verified. Mesh size should be at least 15 × 10 cm, although a larger piece of mesh is sometimes required to cover the MPO. Preferably, choose mesh that adapts to the contour of the space and the cord's elements. It should not have undue memory. Place it without creases or folds. Avoid splitting the mesh. Ensure that its lateroinferior corner lies deep against the wall and does not roll up during space deflation (use glue or careful suturing if necessary).

From the \*Department of Minimally Invasive Surgery, Clinica Portoazul, Barranquilla, Colombia; and †Department of Surgery, Marian Regional Medical Center, Santa Maria, CA.

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Reprints: Jorge Daes, MD, FACS, Department of Minimally Invasive Surgery, Clinica Portoazul, Carrera 30, Corredor Universitario #1-850, Consultorio 411, Barranquilla, Colombia. E-mail: jorgedaez@gmail.com.

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A video describing the CV of the MPO components during an eTEP repair can be seen at: <https://www.facebook.com/jorge.daes/videos/10203676707238837/?l=4600396342676807434/>.

In conclusion, the CV of the MPO, a novel concept derived from a social medium platform, is defined as appropriate exposure

of the anatomical area that must be attained before placing mesh during endoscopic inguinal hernia repair. Many of the CV's components have been taught separately by experts for years and have proved to reduce recurrences and complications. Implementing the CV concept will help standardize a growing variability in laparoscopic and robotic hernia repair, facilitate training, reduce recurrence and complications, and ultimately improve patient care. We propose that CV of the MPO be a prerequisite during MIS hernia repair before mesh implantation and its establishment be duly documented in the operative record. Finally, clinical studies are needed to measure the impact of CV implementation in MIS inguinal hernia repair.

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