Editorial

Personal Reflections on the Inguinal Hernia Repair on the Basis of Surgical Anatomy and Physiopathology

Picardi N*
Department of General Surgery, University of Gabriele d'Annunzio, Italy

EDITORIAL

Although in the western area prosthetic repair of inguinal hernia has taken over the pure surgical techniques, with the advantage of shorter stay times and meaningful reduced recurrences, there are, however, less positive implications when considering you are so missing the surgical culture necessary for a complete technical preparations of residents in surgery. This is anyways a choice favoured by surgical institution for economic reasons in time and stays saving policies, but it is likely to impoverish the surgical culture of the newcomer surgeons.

The numerous alternative prosthetic techniques point that there is not an universally recognized gold standard technique and therefore the expedience for new generations of surgeons not to be oblivious of the anatomic surgical culture and acquire ability in repairing an inguinal hernia with sufficient mastery in traditional surgical technique without necessarily relying on biomedical industry. Furthermore is not to be forgiven that the same surgical Should ice’s technique for inguinal hernia without use of prosthetic mesh, but only a single thread of non-absorbable material, has the same very rare recurrence of the prosthetic techniques, and likewise it requiring a short stay because feasible both in Day Surgery and in One Day Surgery, but requires a full knowledge of anatomy and a very sophisticated surgical technic.

With this belief a thorough reminder of surgical anatomy concerning inguinal region may be useful, together with considerations on the authentic surgical repair according to Bassini, not simply as a historical reminiscence, but mainly to focus its “secrets” in a physio-pathological key, apparently now anachronistic.

Keywords: Those who are familiar with the sailing sport know what it means to “wall the jib” (or head sail) on the bow; this is the safest attachment of the jib to the bow of a sloop.

In repairing an inguinal hernia with the Bassini technique everyone knows that the first point of the plastic is to tighten the joint tendon at the periosteal structure on the pubic spine. This is a key point in Bassini’s technique but not wholly understood in its function.

The normal structure of the abdominal wall at the groin is represented by the convergence of the joint tendons of small oblique and transverse muscles to tightly join the pubic bone very close to the insertion of the straight muscles, while the large oblique at this level is represented only by its laminar aponeurosis (Figure 1, 2).

The three broad abdominal muscles are superimposed on three planes: large oblique, lesser oblique and transverse

Figure 1 Transverse view of large abdominal muscles and their realtionship.

Figure 2 Different planes among large abdominal muscles and the inguinal arch, and normal relationship between joint tendon insertion laterally to that of straight abdominal muscle, and in a posterior plane.
muscles until the abdominal groin but here with a peculiarity: at the confluence to the pubic spine they are cast into the unique aponeurotic structure known as “joint tendon”. In the lateral direction, the three structures retain their individuality, and only the inferior aponeurotic expansion of the large oblique corresponds to the plane of the inguinal ligament of Poupart, while the other two laminae are deeply arranged behind.

The surgical plastic requires the suture of the distal muscular bundles of small oblique and transverse muscles to the tendon-fibrous structure of the inguinal arch with a maximum of three points spaced apart not to interfere with their vascularization. For anatomical reasons, however, oblique and transverse oblique muscles lie in a plane set posteriorly to the inguinal arch, so the three points of the plastic should force them to advance ventrally and firmly. If this difference in planarity persists, muscle fibers must be ventrally drawn from the suture points to the inguinal arch, and may be damaged by normal abdominal muscle movements and traction, causing repeated microtraumas on the firm tightened threads of the suture. It can result in an ischemia with consequent fibrous degeneration, which weakens with time the structure and opens the field to relapse. The adjoining of more suture point could be another mistake because only aggravating the problem, fostering micro-ischemia and therefore weak fibrotic degeneration of a muscular wall requested instead to close without traction the hernia door.

And here comes into play the key element: the joint tendon has to be firmly fixed in a more anterior position on the periosteum of the pubic spine, so attracting forward the muscular planes of lesser oblique and transverse muscle to the same plane of the inguinal arch. This represents a true “sail wall”, and the three plastic points between the lower muscular fibers and inguinal arch will simply approaching them without undue traction and without future microtrauma. The final suture of the large oblique aponeurosis will complete the hernia plastic.

**CONCLUSIONS**

A mature surgeon must be able to repair an inguinal hernia with the same ability, both with prosthetic technique and with surgical technique. The first option can be of great help in recurrences and in such cases is an indisputable progress, and it is preferred in cases where the features of the muscle and aponeurotic wall are not warranted. It is then a rational choice of the prosthetic solution not because it is inevitable and without alternative but because the local conditions do not allow a purely surgical solution, or in case of severe relapse. The knowledge and spread of classical surgical techniques among the surgical residents should be a task of the Specialization Schools: first of all the sophisticated technique of Shouldice, but without forgetting the secrets of plastic according to Bassini mentioned here, without resorting to prosthetic techniques because it is easier and less demanding, and make sure that both of them are mastered by the students.

**HISTORICAL SYNTHESIS OF STEPS FOR INGUINAL HERNIA REPAIR**

- about 120 years from Bassini’s first plastic (1884)
- about 80 years from the coding of the technique of Shouldice (1943)
- Mc Vay’s 1942 underlines importance of transverse muscle aponeurosis and transversalis fascia on Cooper’s ligament and then on ileo-pubic bender
- about 30 years after prosthetic choice (polyester or mersilene or polypropylene meshes)
- overall affirmation of the principle of “free tension”