

HISTORICAL NOTES**BASSINI SURGERY****D. Ion¹, Roxana Gabriela Chiş²**¹3rd Department of General Surgery, The University Emergency Hospital Bucharest, Romania²The University of Medicine and Pharmacy "Carol Davila", Bucharest, Romania

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Abstract

The inguinal hernia had been a pathology of interest for the medical community even before the emergence of anesthesia and surgery as we know them today. Starting with the second half of the 19th century, surgery will have suffered a spectacular evolution along with the development of anesthetic techniques. Initially, the inguinal hernia was treated with an intervention regarding only the superficial inguinal hole, followed by a compulsory wear of orthotics, at that time called "orthopedic support." Eduard Bassini managed to change the course of history in the treatment of this pathology, proposing a new intervention which at that time was considered radical and very courageous.

Keywords: *Bassini surgery, rdical cure of hernia, Bassini operation*

Introduction

I propose to open a window to the European surgical world of 1880s. With the antisepsis and anesthesia era on the horizon, armed with solid knowledge of anatomy, surgeons are trying to impose a solution for an ubiquitous and topographic accessible pathology - inguinal hernia.

This protrusion eviscerated by weakness in the groin was approached by then, only at the superficial inguinal hole through various techniques that addressed exclusive the externalized peritoneal diverticulum - suture or fixation in the deep inguinal hole.

The patient was imposed a strict period of immobilization for up to 30 days, followed by a compulsory wear of orthotics, called at that time "orthopedic support." In these circumstances postoperative recurrence was a rule after a variable period of time.

First radical cure of hernia

Eduardo Bassini (1844-1924) Professor of Surgery at the University of Padova, Italy, takes a step deeper into the inguinal region, trying to repair hernia's place of origin, ie, the posterior wall of the inguinal canal. Thus during 1884-1887, he made a total of 42 operations by its own procedure, with the results disclosed in the Italian Society of Surgery of Genoa. Two years later pattern is "radically new method to cure inguinal hernia", which presents surgery illustrations, and a rigorous analysis of a group of 262 patients followed up to 4.5 years post surgery with a very low relapse rate (2.7%).

According to the new method, postoperative mobilization was done immediately and orthopedic proponent was not compulsory, which is why the surgery was considered "radical."

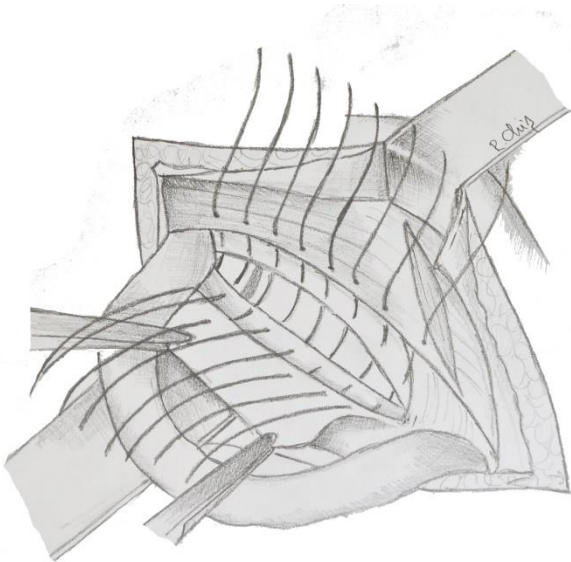


Figure 1 - Bassini procedure - restoring the posterior wall of the inguinal canal in triple layer

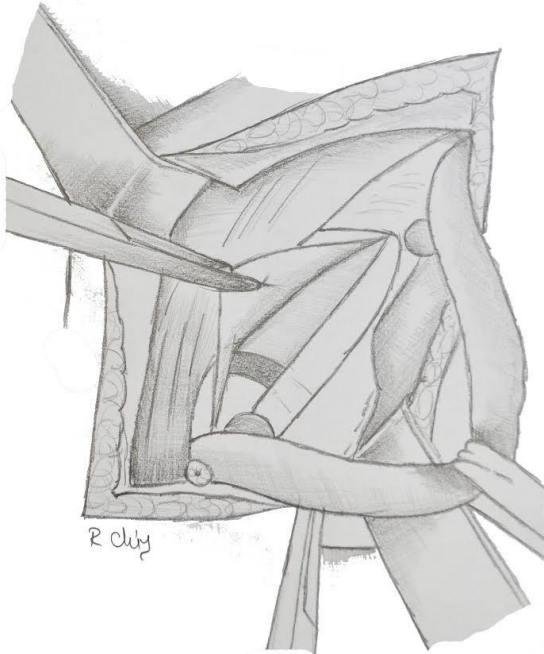


Figure 2 - Sectioned posterior wall of the inguinal canal

The new techniques involved in the procedure are:

- Sectioning anterior wall of the inguinal canal, isolating inguinal funiculus and offered an explanation of the entire rear wall including the deep inguinal hole.
- Visible dissection of the hernia bag(s) until position "high"
- Circumferential section of the cremaster muscle at the deep inguinal hole, making a "thinning" of funiculus, and thus a narrowing of the new deep inguinal hole.

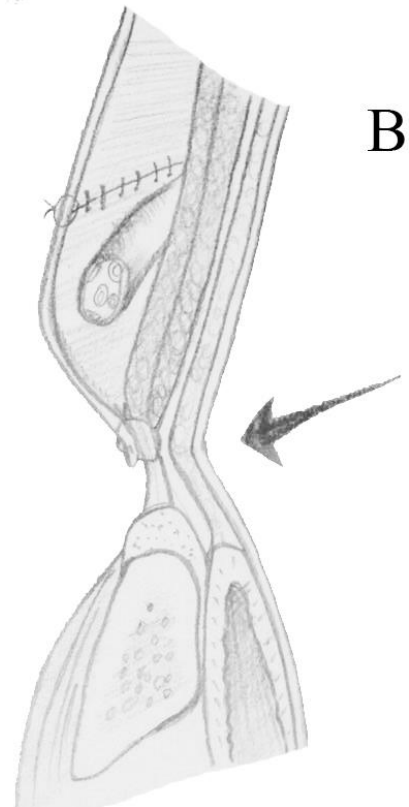
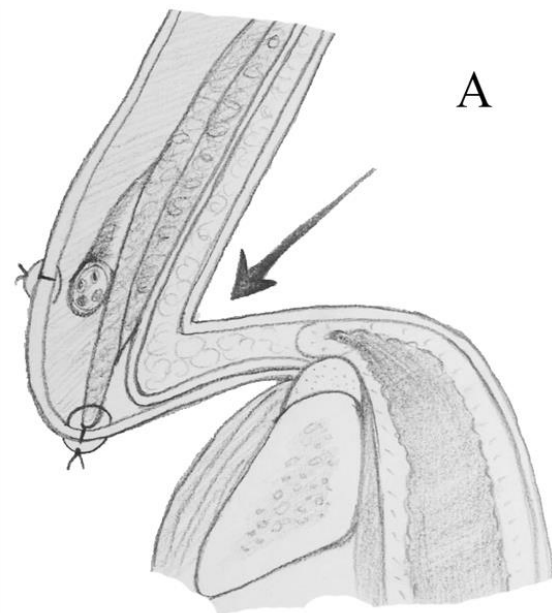


Figure 3 - Sagittal section through the inguinal region, medially from the femoral vessels, at the same level with the Gimbernat ligament: A - After an incorrectly managed hernia cure, only the internal oblique muscle was sutured to the arcade; the femoral ventral vaulting of the femoral arcade is exaggerated and the peritoneum, ventrally pushed, creates conditions for a relapse hernia. B - After a correctly managed hernia cure: the internal oblique muscle, the transversus muscle of the abdomen and fascia transversalis have been sutured to the ilio-pubic tract; the vaulting of the femoral arcade has been widely reduced.

- Sectioning the posterior wall of the inguinal canal (represented by transversalis fascia) from the deep inguinal hole to pubic, offering direct access from the properitoneal Bogrossi space to the femoral hole.

- Musculo-aponeurotic structures were clearly exposed in both the inguinal ligament and ileopubic tract (lower); and aponeurotic fascia transversalis and the transverse arch (superior).

- The reconstruction of the posterior wall was made with separate nondegradable threads starting from pubian region and abdominal right edge, continuing laterally to the deeper hole, which was recalibrated.

- Restoring anterior wall and reconstitution of the inguinal canal and superficial inguinal hole as passage for the spermatic cord.

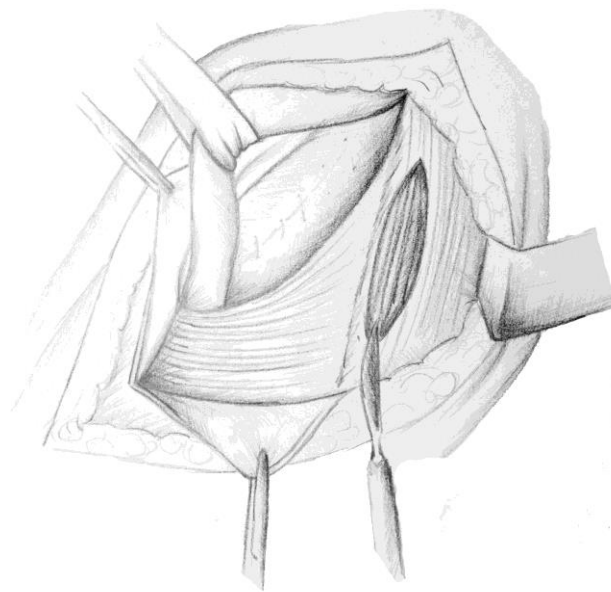


Figure 4 - The rectus abdominis muscle sheath's relaxing incision in the cure of inguinal hernia

Outcome of the revolutionary technique

Besides the book mentioned, Bassini has published 3 articles on this topic only in Italian and three in German, therefore the initial dispersion of the original process was fragmented and poorly made.

The operation benefited from a presentation in an atlas published in 1932 in Italy and subsequently in Germany, France and England.

Along the way, derivative names rose, such as: The north American, French or Canadian Bassini Surgery, as well as Bassini McVay, Bassini Halsted etc.

The alternate names, beyond nomenclature confusion, were trying to impose various contributions more or less original, but in fact hiding gradual removal of the original process, and obviously decreasing efficacy. For example North American process has become the most common but also compromising the original solution because it omitted two mandatory requirements: resection of the cremaster muscle and section of fascia transversalis.

It thus reached unacceptably high relapse rates (30-40%) compared to the original process effectiveness, mentioned above. With the passing years it was enough to reproach methods that failures were attributable to "improvements" made along the way.

To keep up with the wave of "hybridization" of the original surgery, periodic reassessments by surgeons with special interests in the field was required, either reediting original monograph or removing the additions that decreased efficiency. Periodic reassessments reached a peak with the one of G. WANTZ, who declared the original Bassini surgery the gold standard in the field, with the author named "father of modern herniology". Add to note that one major addition and has been proven efficient intime: relaxation incision in the rectus abdominis muscle sheath that significantly reduces the tension in the suture line of the rear wall (Tanner 1942).

Bassini operation principle was constructively taken by Canadian surgeon E.E Shouldice in 1945, who restored the rear wall in four layers, with two doublesurjets. Even open or laparoscopic methods, prosthetic reinforcements are in fact posterior inguinal wall as indicated by Bassini 'locus minimum aeresistentiae' in inguinal hernia.

Possible answers

Initial description was fairly brief with the omission of significant details. For example transversalis fascia section is not mentioned explicitly.

Mismatch between drawings and explanatory text. For example, in drawing the suture starts from the deep hole while in text, it starts from the pubis.

Poor and fragmented dispersion of scientific information in the early twentieth century, due to technological limits of that historic moment

Profile scientific societies and practical guides were born later in order to correct such deficiencies

The original procedure was perverted not only through ignorance, but also through seeking comfort and originality regardless of the costs.

Conclusions

Although the original Bassini operation is rarely practiced nowadays, today it maintains conceptual origins in making modern

herniorraphy recommended by current guidelines.

The ups and downs of this revolutionary surgical procedure teaches us that it is not sufficient discovery itself, but equally important are dispersion, consecration and imposition as standard in all professional communities.

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