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# Introductory Chapter: Hernia Surgery and the Developing World

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## 1. Introduction

Hernias are as old as history of mankind. The history of hernia dates back to 400 BC when Ancient Greeks diagnosed and proposed various modes of treatment. The word hernia has its origin from the Greek word *hernios*, a bud or a shoot. Despite the fact that the common course of the hernia was not sudden and the progress was typically slow, it eventually grows to an enormous size at times and could make the life of the patient difficult as far as the routine work was concerned. This coupled with an impending danger of complications made it mandatory for the physicians to find out some remedy.

For many years, different surgical and nonsurgical options were practiced and offered to patients experiencing complicated hernias such as obstructed and strangulated hernias. One of the common strategy included surgery with castration as a component to get rid of the complicated hernia. Nonsurgical strategies comprised principally of applying pressure belts to keep the hernia contents from descending into scrotum. This was done after reducing the contents of the hernia sac and then applying firm pressure of the belt especially on to the deep inguinal ring to keep the passage of hernia completely blocked. The other methods included phlebotomy, tobacco douches, and exceptional eating methodologies. Curiously, trusses (pressure gadget) were additionally portrayed and utilized for noncomplicated hernias and that option continues even today.

### 1.1. Evolution of hernia surgery

Hernia surgery has made a tremendous improvement in the surgical treatment over many decades from basic repair to the present laparoscopic repair. Various pioneer specialists presented different techniques for the surgical correction and repair of hernia. Among all, the

one who merits specific acknowledgment is Edoardo Bassini (1844–1924) who was an Italian specialist who proposed the idea of restoring the distorted anatomy of the inguinal region to achieve an optimal cure of hernia. His ultimate doctrine was that only complete restoration of the anatomy and reinforcement of the stretched out tissues could produce complete cure. Each and every subsequent strategy for inguinal hernia surgery until introduction of fabricated materials was in actuality varieties of Bassini's doctrine.

It was not until 1984 when Irvin Lichtenstein proposed the idea of a tension-free repair by applying a mesh to strengthen the weak spot without rendering any tension on the tissues. This led to a significant change in the overall outlook of hernia patients especially with reference to the recurrence of hernia. Subsequently, a large number of different prosthetic materials and changes in the technique were introduced until the advent of laparoscopic repair of hernias.

## 2. Laparoscopic hernia repair

Laparoscopic surgery has brought a phenomenal change in the surgical practice all over the world. Laparoscopic inguinal hernia repair has been presented after the achievement of laparoscopic cholecystectomy on the preface that there would be less postoperative pain and agony, the repair of recurrent hernias would be less demanding, and the bilateral hernias could be dealt simultaneously with enhanced cosmetic results. It has not taken a long time to become the most popular mode of surgical treatment for all types of hernia, especially the groin and ventral abdominal hernias. It is completely different from conventional surgery in which the surgeon enjoys wide exposure, tissue contact, binocular vision, and the use of traditional equipment [1]. A tremendous effort has been made to spread and popularize this new technique especially in the developing countries [2]. However, there is still a major gap in the implementation of modern surgical methods in underdeveloped countries due to various reasons including financial constraints, lack of equipment, and lack of proper training of surgeons. Despite gaining a worldwide popularity, the open surgery is still practiced in the world and more so in the developing countries due to financial constraints [3]. Although the impact of laparoscopic surgery is the same in developing world, the acceptance of laparoscopic surgery is not as much as in the developed world.

Laparoscopic inguinal hernia repair is a current global change in the treatment of this basic surgical issue. Various reports assert its predominance over open repair of hernia in terms of lesser postoperative pain, early return to normal life and a substantial decrease in recurrence rate [4–6]. There are basically two laparoscopic approaches in inguinal hernia surgery which are in common practice globally.

**A. The totally extraperitoneal (TEP) repair**, albeit actually troublesome, is a type of laparoscopic hernia repair which is picking up popularity and acknowledgment all around the world. It has a unique feature that it does not puncture the peritoneum. In spite of known confinements and dangers, the TEP is getting an overall acceptance and ubiquity as an ever-increasing number of specialists are adopting this technique. It is, however, necessary to have an adequate experience and be clear about the groin anatomy before one should attempt this technique.

**Surgical technique:** The TEP involves the regularly utilized procedure with a 10-mm infra-umbilical port. Through this port, a balloon is advanced after cutting the anterior rectus sheath for insufflating and dissecting out the additional peritoneal space as recommended by many experts in this field [7]. A 100-cc saline or air is insufflated and that very effectively produces a sufficient space for further dissection. The balloon is then pulled out and further insufflation is achieved by way of using an insufflator attached to the trocar. A 10-mm telescope is then inserted and retained followed by insertion of a 5-mm trocar 2 cm above pubic symphysis. A third 5-mm trocar is placed in between these two trocars. Sidelong space made by continuous dissection using traction and countertraction method. The cord is very gently separated from the sac. A polypropylene mesh is then moved onto a grasper and pushed through 10-mm port subsequent to guaranteeing that adequate space is as of now made to lay the mesh. Once in the additional peritoneal space, mesh is unrolled with the assistance of graspers and afterward spreading it on a level plane from midline to lateral ward to cover the hernia orifices adequately. The mesh is fixed by applying few tackers.

**B. Transabdominal preperitoneal (TAPP) repair of inguinal hernia.** In this technique, the hernia repair is essentially done transabdominally and a mesh is applied after having explored the whole abdomen and excluding any coexisting pathology. This technique basically involves creation of an infraumbilical 5-mm port through which a 5-mm trocar is introduced for insufflation to place other ports under direct vision to ensure safety. A 5-mm scope is passed to take a tour of the abdomen and then two 5-mm trocars are placed lateral to and at the level of umbilicus on each side. After having created the ports, the peritoneum is incised and bluntly dissected from abdominal wall taking care of the triangle of doom. The hernia is reduced by careful dissection and the mesh is applied in the room created by initial dissection. The mesh is then fixed in proper position by applying tackers. The peritoneal flaps are also sutured over the mesh.

Both of the laparoscopic techniques have their advocates comparing the techniques in terms of ease of the procedure, duration of the operation, operative, and postoperative complications.

### 3. Conclusion

The hernia surgery is in a continuous state of amendment and improvement. So far, there has been a lot of change from the conventional open repair to the present laparoscopic approach. There is a lot to do to make this laparoscopic approach to be taken up by surgeons in the developing world by way of training options and making it economically acceptable to the poor community where the disease is much more common as compared to the affluent society.

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