Modern Trends in Management of Incisional Hernia

Essay

Submitted for partial fulfillment of master degree in general surgery

Presented by

Ahmed Abdel Mohsen Mandour

(MB.B.CH)

Supervisors

Prof. Dr. Ashraf Farouk Abadeer

Professor of General Surgery

Ain Shams Uneversity

Prof.Dr. Hesham Adel Alaa El-Din

Professor of General Surgery

Ain Shams University

Dr. Mohammed Mahfouz Omar

Lectuer of General Surgery

Ain Shams University

Faculty of Medicine

Ain Shams University

2010-2011

الطرق الحديثة في علاج الفتق الجراحي

رسالة مقدمه من الطبيب

أحمد عبد المحسن مندور

توطئه للحصول على درجة الماجستير فى الجراحه العامه

تحت إشراف

ا . د / أشرف فاروق أبادير

أستاذ الجراحه العامه

كلية الطب جامعة عين شمس

ا . د / هشام عادل علاء الدين

أستاذ الجراحه العامه

كلية الطب جامعة عين شمس

د / محمد محفوظ عمر

مدرس الجراحه العامه

كلية الطب جامعة عين شمس

كلية الطب

جامعة عين شمس

٢٠١٠ـ ٢٠١١

Incisional hernia is a common long term complication following abdominal surgery as it is estimated to occur in approximately 11% of cases. However the true incidence is probably higher since the majority are asymptomatic.

The patient with incisional hernia commonly presents with unremarkable clinical symptoms, in the first instance. Most patients give a history of a lump or bulge that, elicited by physical activity such as exercise or coughing, and disappearing after stopping the activity.

Sonography is a helpful diagnosic aid, particularly in small or barely palpable hernias, or in obese patients, as it is non-invasive, time and cost-saving, readily repeatable, and practically risk-free. Besides location and size, ultrasonography allows the determination of hernial content, as well as excluding important differential diagnoses such as lymphoma or hematoma.

The treatment of ventral incisional hernia is operative repair, and three general classes of operative repair have emerged in the modern era. These techniques include primary suture repair of the hernia, open repair of the hernia with prosthetic mesh, and laparoscopic incisional hernia repair.

Many variations of mesh repair for the incisional hernia have been described(The onlay technique,The inlay technique&The underlay technique).

Generally, the task of a surgical mesh implant is to provide biomechanical strength to the attenuated fascial structures. Surgical mesh is designed to withstand the tension forces acting on the abdominal wall. Further, the mesh must not impede and ideally should facilitate the healing process of the hernial defect by encouraging ingrowth of the body's

LIST OF TABLES

Contents

LIST OF ABBREVIATIONS

1-ACE: Angiotensin converting enzyme

2-CT: Computed Tomography.

3-ePTFE: expanded Polytetrafluroethylene.

4-FS: Fibrin Sealants.

5-GERD: Gastro Esophageal Reflux Disease.

6-IPOM: Intraperitoneal Onlay Mesh Technique.

7-ITU: Intensive Therapy Unit.

8-LVHR: Laparoscopic Ventral Hernia Repaire.

9-MMP: Matrix Metallo-Protease.

10-ORC: Oxidised Regenerated Cellulose.

11-PM: Provisional Matrix.

12-PP: Polypropylene.

13-PTFE: Polytetrafluroethylene.

14-PVDF: Polyvinylidene Fluride.

15-TIMP: Tissue Inhibitors of Matrix metalloProtease.

LIST OF FIGURES

Introduction

Incisional hernia is defined as a bulge visible and palpable when the patient is standing,seen over previous abdominal scar and often requiring support or repair ***(Leaper et al., 2002)***.

It is a common complication of abdominal surgery, reported in up to 11 percent of patients generally and in up to 23 percent of those who develop postoperative wound infection ***(Leaper et al.,2002).***

Treatment involves further major surgery and the results may be poor,with recurrence rates of up to 49 percent reported.The high recurrence rates prompted recommendations of cautious attitude to surgical treatment of incisional hernia in the mid1980s ***(Salameh et al.,2002***).

Traditional open hernia repair necessitates opening the previous incision and dissection of the peritonized sac followed by closure of the defect by either sutures or prostheticmesh***(Klingue et al.,2005).***

The need to open all or part of the previous incision and the lateral dissection results in excssive soft tissue mobilization and trauma***(Klingue et al.,2005)*** .

This has led to a complication rate of up to 20 percent involving the wound, exposure and infection of the mesh, fistula formation, and other proplems. But in laparoscopic repair, large prosthetic mesh is placed intraperitonealy, overlapping the defect by at least 3to5cm. The laparoscopic approach eliminates the

extensive tissue dissection needed with the open approach and its attendant complications (***Lomanto et al.,2006***).

The advantages of laparoscopy include percise identification of the location and type of hernia,excellent exposure,accurate placement of mesh,avoidance of major dissection or injury to surrounding structures(e.g., nerves,ureter),excelent cosmotic result and short post-operative convalescene (***Faddegon et al.,2008).***

The laparoscopic approach appears to be effective in complex patients, such as the obese and those who have failed prior open repairs.Obese patients especially may benefit because of the smaller wounds and, theoretically, decreased wound complications ***(Perrone et al., 2005).***

Laparoscopic incisional hernia repair is a better procedure than the traditional anterior approach.It is associated with a shorter operative time and hospitalization, a faster ability to return to work, and a lower rate of complications. Although the laparoscopic procedure is more expensive, a significantly shorter hospitalization reduces total costs to a level comparable to that of open surgery ***(Olmi et al.,2007).***

Finally, there are several studies directely comparing the open and laparoscopic incisional hernia repairs. They demonstrated that patients undergoing a laparoscopic incisional hernia repair were 58% less likely to develop a postoperative complication compared to undergoing an open repair ***(Rudmik et al.,2006).***