بسم الله الرحمن الرحيم

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

Recent Modalities In Reconstruction Of Anterior Abdominal Wall Defects

Essay

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General Surgery

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الجديد في إصـلاح الخـلل في جـــدار البطن الأمامي

رسالة

توطئه للحصول علي درجه الماجستير في

الجراحة العامة

مقدمه من

الطبيبة/ أسماء محمد مصطفي جنيدي

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Asmaa Geneidy

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List of Abbreviations

CDC	Centers of Disease Control and prevention
CST	Component Separation Technique
CT	Computed Tomography
CTA	Computed Tomographic Angiography
DIEA	Deep Inferior Epigastric Artery
DFSP	Dermato Fibro Sarcoma Protuberance
FTT	Free Tissue Transfer
LCFA-VL	Lateral Circumflex Femoral Artery-Vastus Lateralis
MCL	Mid Clavicular Line
ORC	Oxidized Regenerated Cellulose
PTFE	Poly Tetra Fluro Ethylene
RF	Rectus Femoris
SCIA	Superficial Circumflex Iliac Artery
SIS	Small Intestinal Submucosa
STS	Soft Tissue Sarcomas
TAWH	Traumatic Abdominal Wall Hernia
TAR	Transvesus Abdominus Release
TE	Tissue Expansion
TFL	Tensor Fascia Lata
VAC	Vacuum Assisted Closure

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INTRODUCTION

The abdominal wall is defined cranially by the xiphoid process of the sternum and the costal margins, and caudally by the iliac and pubic bones of the pelvis. It extend to the lumbar spine, which joins the thorax and pelvis and is a point of attachment for some abdominal wall structures. Integrity of anterior abdominal wall is primarily dependent upon the abdominal muscles and their conjoined tendons, these muscles assist in respiration and control the expulsive efforts of urination, defecation, coughing and parturition. They also work with the back muscles to flex and extend the trunk and hip, rotate the trunk at the waist, and protect viscera by becoming rigid. The contour of the abdomen is dependent upon age, muscle mass, muscle tone, obesity, intra-abdominal pathology, parity and posture ***(Grey and Mizell, 2006).***

The absence of an intact abdominal wall is suggested to results in loss of the mechanical end point of satiety, leading to unintentional weight gain. Complex or recurrent abdominal wall defects may be the result of failed attempt at closure, trauma, infection, radiation, complications of surgical procedures such as incisional hernia, burns, necrosis, or tumors resection ***(Mathes et al., 2000).***

Indications for reconstruction can be both symptomatic and structural, with goals ranging from pain relief to prevention of

incarceration. The clinical problems that requires abdominal wall reconstruction are congenital abdominal wall defects incluing omphalocele, gastroschisis, and bladder or cloacal exstrophy, and clostridial myonecrosis. Other indications include tumors resection including; desmoid tumors, dermatofibrosarcoma protuberous, sarcomas, metastatic tumors, radiation ulcers and ventral hernia ***(Gopinathan and Granick, 2006).***

Various modalities used for abdominal wall reconstruction such as, primary assisted closure, skin and fascial grafts, mesh, skin graft over mesh or omentum, fascial release, components separation, tissue expantion, pedicled muscle, myocutanous flaps and free flaps ***(Gopinathan and Granick, 2006).***

Nerves available for creating a sensate reconstruction in abdominal and groin reconstruction include the anterior cutaneous nerves, other sensory cutaneous nerves include the iliohypogastric and ilioinguinal nerves. Potential motor nerves include the motor branches of the intercostal that supply segmental motor function to the rectus abdominis muscle. Regardless of the method chosen for reconstruction, integrity of the abdominal wall should be emphasized. The method should insure that the abdominal contents remain structurally in the abdominal cavity and the risk for later hernia development should be minimized ***(Serletti, 2009).***

The goal of reconstructive surgeon in managing complex abdominal wall defects is to restore the structural and functional continuity of the musculofascial system and to provide stable and durable wound coverage ***(Grevious and Torre, 2008).***

Aim of the Work

Providing an overview on the new methods which are available in the reconstruction of anterior abdominal wall defects, with more concentration on the role of different types of flaps used in reconstruction to achieve the most accepted results.

Structural and Functional Anatomy of the Anterior Abdominal Wall

Knowledge of the anatomy of the anterior abdominal wall has enabled the reconstructive surgeons to achieve one of the goals in managing abdominal wall defects which is restoration of the structural and functional continuity of the musculofascial system ***(Grevious, 2006).***

Anatomy of the anterior abdominal wall:

The anatomical layers of the abdominal wall include skin, subcutaneous tissue, superficial fascia, deep fascia, muscle, extra-peritoneal fascia, and peritoneum. This anatomy may vary with respect to the different topographic regions of the abdomen. The major source of structural integrity and strength of the abdominal wall is provided by the musculofascial layer ***(Grevious, 2006).***

The skin:

Skin was described as being thin compared with that of the back and relatively mobile over the underlying layers except at the umbilical region, where it is fixed. Natural elastic traction lines of the skin (Langer's Lines) of anterior abdominal wall are disposed transversely, above the level of the umbilicus these lines run almost horizontally while it runs with a slight inferiomedial obliquity below the umbilical level. Incisions made along, or parallel to these lines tend to heal without much scarring, whereas