

Contents

1. Introduction.	1-2
2. Aim of the essay	3
3. Review of literature:	
• Anatomy of the abdominal wall.	4-32
• Etiology and complications of burst abdomen.	33-81
• Methods of closure of burst abdomen.	82-138
• Recent trends in management of burst abdomen.	139-155
• Figures.	156-188
4. Summary and conclusion.	189-191
5. References.	192-207
6. Arabic summary.	1-2

List of Figures

- Fig. (1):** Embryo at 12 weeks at time of abdominal wall formation
- Fig. (2):** Frontal view of the anterolateral wall layers.
- Fig. (3) :** External Oblique Muscle.
- Fig. (4):** Internal Oblique Muscle.
- Fig. (5):** Transversus Abdominis Muscle.
- Fig. (6):** Rectus abdominus.
- Fig. (7):** The concept of bilaminar aponeuroses of the external oblique muscles.
- Fig. (8):** Deep arterial system of anterior abdominal wall.
- Fig. (9):** Superficial veins of the anterior abdominal wall.
- Fig. (10):** Vertical midline incision with gentle curve around the umbilicus.
- Fig. (11):** Paramedian incision.
- Fig. (12):** Upper abdominal paramedian incision.
- Fig. (13):** Lower Paramedian incision.
- Fig. (14):** McBurney muscle-splitting incision.
- Fig. (15):** Disadvantages of the closure of vertical incision
- Fig. (16):** The subcostal or transverse incision obviates the disadvantages of the closure of the vertical incision.
- Fig. (17):** Stages of the mass closure of the midline abdominal incision
- Fig. (18):** Mass closure of the paramedian incision
- Fig. (19):** Retention sutures tied and held in position supported by rubber tubing.
- Fig. (20):** Vacuum-assisted Bogota bag dressing.

Fig. (21):Six anatomic subunits as classified for abdominal wall reconstruction.

Fig. (22): Retention Sutures.

Fig. (23): The VAC.

Fig. (24): Mechanism of action of the VAC.

Fig. (25): Bogotá's bag in combination with VAC technique.

Fig. (26): Modified "components separation technique.

Fig. (27): Endoscopic component separation technique.

Fig. (28): Using of skin grafting in the coverage of a large abdominal wall defect.

Fig. (29):Cross-sectional schematic diagram of the technique for turnover flap creation from the anterior rectus abdominis sheath..

Fig. (30): Local transpositional and rotational flaps.

Fig. (31): Antero-lateral thigh flap.

Fig. (32): Anterio-lateral thigh flap elevation.

Fig. (33): Patterns of muscle flap vascular anatomy.

Fig. (34): Flaps used in abdominal wall reconstruction.

Fig. (35): Arc of rotation of rectus abdominis.

Fig. (36): Anatomy and dissection of the tensor fasciae latae.

Fig. (37): The tensor fascia lata myo-cultaneous flap elevated as island flap.

Fig. (38): Tensor fascial lata free flap.

Fig. (39): Course of the rectus femoris muscle.

Fig. (40): Elevated rectus femoris flap for abdominal wall defect.

Fig. (41): Technique of sandwich omental flap.

Fig. (42): Dissection of the space for tissue expander placement.

Fig. (43):Tissue expanders partially expanded in lateral abdominal wall.

Fig. (44): Soft tissue defect closed with expanded flap.

Fig.(45): Forty-two-year-old man with necrotizing pancreatitis underwent 15 debridements, Vicryl mesh closure, and split thickness skin graft.

Fig. (46): Schematic representation of inlay repair technique with complete intraperitoneal placement of mesh implants.

Fig. (47): Scanning electron microscopy images of the appearance of the different prosthetics.

Fig. (48): Site of mesh placement during the use of mesh to augment the abdominal wall after component separation technique.

Fig. (49): Sheet of AlloDerm.

Fig. (50): Example of interpositional placement of AlloDerm.

Fig. (51): Permacol mesh sutured in place over exposed bowel 13 days after initial laparotomy for faecal peritonitis.

Fig. (52): Appearance of Permacol mesh in situ after 4 weeks.

Fig. (53): At 12 months postoperatively, the patient was re-referred with most of the skin graft in situ.

Fig. (54): Examples of complex abdominal wall defects.

Fig.(55):Examples of abdominal wall defects immediately preoperatively.

Fig.(56): Creation of autogenous pedicled, demucosalized intestinal sheet.

Fig.(57): The reconstructed abdominal wall with regenerated mucosa 6 months postoperatively.

Fig.(58): Reconstructed abdominal wall 12 months postoperatively and 60 months postoperatively.

Fig. (59): The skin of the umbilicus is being attached to the linea alba with non-absorbable suture.

Fig. (60): Cone shaped flap.

Fig. (61): Schematic drawing of the inverting bilateral figure of eight suture.

Fig. (62): Stitch-sequences after implantation of the polypropylene mesh between the posterior rectal sheath and the rectus abdominis.

List of Tables

Table (1):	Biological process of wound repair.	37
Table (2):	Suture materials in common use in surgery: non-absorbable	54
Table (3):	Suture materials in common use in surgery: absorbable	55
Table (4):	Risk factor scores for abdominal wound dehiscence	79
Table (5):	Risk categories for wound dehiscence	79
Table (6):	Repair of partial abdominal wall defects	87
Table (7):	Repair of complete abdominal wall defects	88
Table (8):	Management of abdominal wall defects	92
Table (9):	Flap algorithm	119

List of Abbreviations

Abbreviation	Meaning
ADM :	Acellular Dermal Matrix
ALTF :	Antero-Lateral Thigh Flap
COPD :	Chronic Obstructive Pulmonary Disease
DIEA :	Deep Inferior Epigastric Artery
DSEA :	Deep Superior Epigastric Artery
e PTFE :	Expanded Polytetraflouroethylene
ECG :	Electro Cardiogram
EGF :	Epidermal Growth Factor
ENT :	Ear Nose and Throat
FGF :	Fibroblast Growth Factor
FTT :	Free Tissue Transfer
HMWK :	High Molecular Weight Kinogen
IL :	Interlukeins
INF :	Interferons
LDM :	Latissimus Dorsi Muscle
LMWH :	Low Molecular weight Heparin
PDGF :	Platelet-Derived Growth Factor
PTFE :	Polytetraflouroethylene
RF :	Rectus Femoris
SFS :	Superficial Fascial System
STSG :	Split Thickness Skin Graft
TE :	Tissue Expansion
TFL :	Tensor Fascia Lata
TGF-β :	Transforming Growth Factor β
TRAM :	Transverse Rectus Abdominis Muscle
UFH :	unfractionated Heparin
VAC :	Vacuum Assisted Closure