BSOG PG FORUM

Presenter: Q1 by Dr Vandana V
2nd Year PG, MVJ MC & RH

Q2 by Dr Beryl Jebapriti A
3rd Year PG, MVJ MC & RH

Q3 by Dr Deepthi DC
2nd Year PG, MVJ MC & RH

Guide: Dr R K Saxena
Professor, MVJ MC & RH

QUESTION 1

(A) What are the different methods to assess chorionicity in pregnancy? (5)

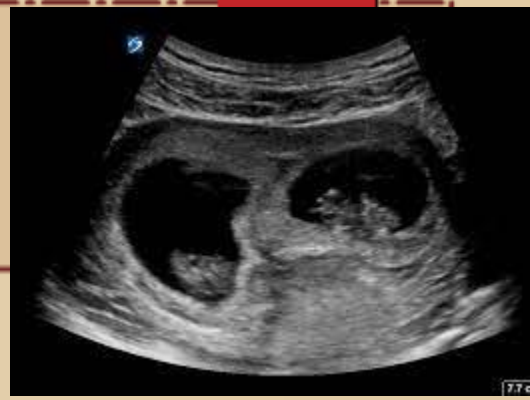
(B) What are the implications of chorionicity in the management of twin pregnancy? (5)

Reference: *Williams obstetrics 25th edition.*

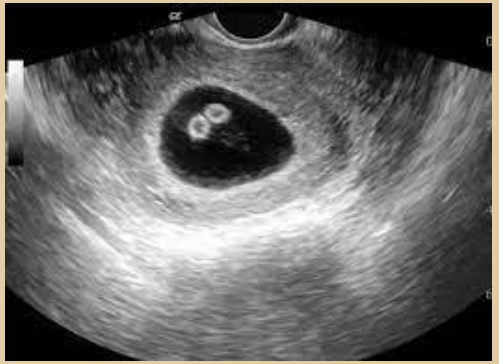
Methods to Assess Chorionicity

- Chorionicity referes to the no. of chorions.
- Features to evaluate chorionicity vary according to GA
  - **Sonographic determination:**
    - Accuracy is greatest in 1st trimester
  - **Placental examination**
  - **Cord blood examination**

Methods to Assess Chorionicity



- **In 1st trimester:**
  - No. of gestational sacs = No. of chorions
  - A thick band of chorion separating two gestational sacs indicates dichorionic pregnancy.



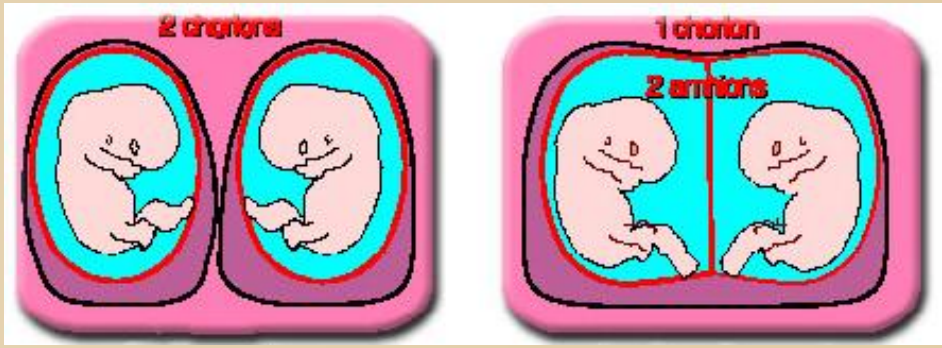
  - Monochorionic twins have a single GS
  - (The no. of yolk sacs correlates with the no. of amnions)

Methods to Assess Chorionicity

After 10-14 weeks:

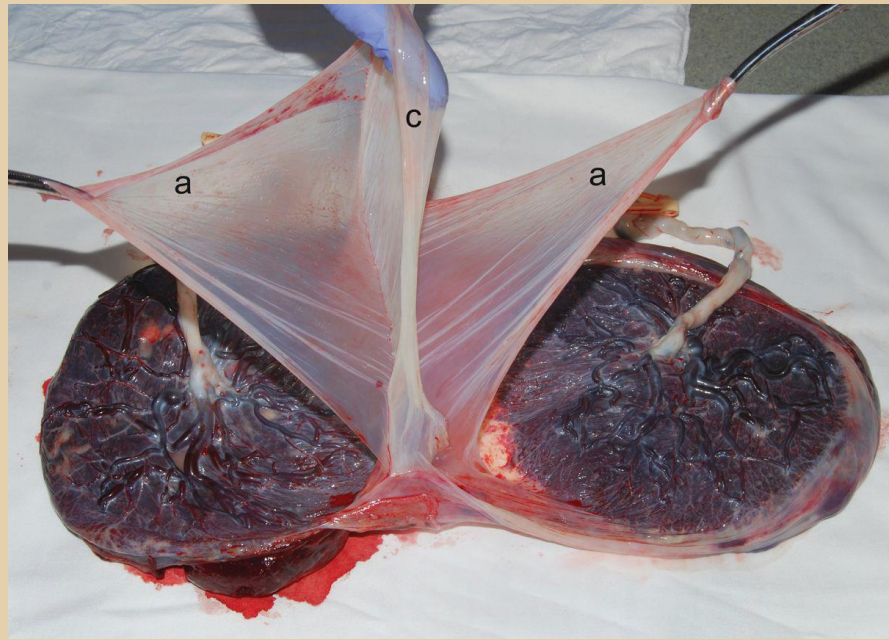
- The no. of placental masses (2 = Dichorionic)
- The thickness of membrane dividing the sacs (>2mm = Dichorionic)
- Presence of an intervening membrane (T sign / Lambda sign)
- Fetal gender.

(Different Gender – Dichorionic)



Placental examination

- Visual examination of placenta and membranes
- No of amnion/ chorion (>2 = Dichorionic)



Blood type

- Blood typing of cord blood.
  (Different Bl groups = Dichorionic)
- DNA Zygocity

B. Implications of Chorionocity

- Determining chorionicity at an early stage is very **important in the management** of twin gestations.
- It is important to decide regarding:
  - **Anticipate & look for complications in twins gestation**
  - **Timing of delivery**
  - **Mode of delivery**

Maternal

More in Monochorionic Twins

- Miscarriage
- IUGR
- Preterm labour
- Operative morbidity

Fetal

More in Monochorionic Twins

- Anomalies
  - Conjoined
  - TRAP / TTTS
- Discordant Twins
- Perinatal mortality and neurological injury rates

- **Timing of delivery**: MCMA Preg terminated by 34 wk
  DCDA preg terminated by 37wk
- **Mode of delivery**: LSCS- if Conjoined Twins, MCMA

QUESTION 2

(A) Indications and challenges of elective single embryo transfer (eSET). (5)

(B) Role of imaging in adenomyosis. (5)

Reference:
1. Lee et al. Contraception and Reproductive Medicine (2016) 1:11. DOI 10.1186/s40834-016-0023-4

2. Munro MG, Critchley HOD, Fraser IS., FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. Int J Gynaecol Obstet. 2018 Dec;143(3):393-408.

Elective Single Embryo Transfer (eSET)

- Elective single embryo transfer (eSET) is the intentional transfer of one embryo when there are multiple embryos of appropriate stage and quality available.

- *(This should be differentiated from obligatory or nonelective single embryo transfer, where the patient has only one embryo available for transfer.)*

eSET : Background

- Mid-1980s: IVF Cycle success rate - 20 % with one embryo, and up to 40 % with the transfer of four embryos.
- So multiple embryos were transferred to maximize pregnancy rates.
- Multiple gestations have substantial perinatal and neonatal complications: pregnancy loss, preterm births, congenital abnormalities, and increased perinatal mortality.
- Health care costs: delivery-related hospital expenses was up to 4 times more per child for multiple gestations compared to singletons
- Hence, debate for the ideal number of embryos for transfer was born

eSET : Indication

ASRM/SART recommended criteria for eSET: (2013)

- Good prognosis patients less than 35 years old should have a single day 5 embryo transferred.

  (Patients > 35 y may be offered transfer of 2 or 3 embryos. Data supports eSET in good prognosis pts less than 38 y)

- First or second IVF cycle
- Previous successful IVF cycle
- Recipient of embryos from donated eggs

eSET : Challenges – current scenario

Challenges to increased use of eSET exist.

- Provider and patient education,
- Financial considerations,
- Embryo selection
- Successful cryopreservation

Challenges – Provider and patient education

- Clinicians are often reluctant to encourage eSET because of concern that Preg Rates (PRs) will be less than (Double embryo transfer) DET.
- Patients preferences & choices clouded by feelings of desperation to achieve pregnancy. They prefer DET resulting in a child, even with significant impairment, than no child at all.
- **Education**: Comparing eSET & DET: IRs were same (18%) but ongoing PRs were 35% higher for eSET, while multiple gestation rates dropped significantly.
- High maternal, fetal, and neonatal complications between singleton and twin pregnancies.

Challenges – Reducing Financial Disincentives

- The delivery-related hospital expenses was up to four times more per child for multiple gestations compared to singletons
- Financial considerations motivate patients to desire transfer of multiple embryos, and risk multiple gestation
- Limiting high costs of multiple IVF cycles to promote eSET.
- Increased availability of insurance coverage for infertility treatment (Patients opted for eSET over DET - 50% more often when they had insurance)

Challenges – Improving Embryo Selection

- The selection of the best embryo(s) for transfer continues to rely on morphologic evaluation
- Genomic evaluation through preimplantation genetic screening.

Challenges - Optimizing Embryo Cryopreservation

- A successful embryo cryopreservation program is critical to practical application of eSET. Without the ability to store viable embryos for later use, eSET is difficult to support.

(B) Imaging in adenomyosis

- Adenomyosis is a benign condition of the uterus caused by a proliferation of endometrial glands and stroma leading to ill-defined lesions within the myometrium.

- The displaced glands cause spiral vessel angiogenesis and smooth muscle hyperpalsia and hypertrophy. Thickening of the junctional zone and uterine enlargement can result.

- Clinical presentations: AUB, dysmenorrhea, pelvic pain, and uterine enlargement; 1/3rd are asymptomatic

(B) Imaging in adenomyosis

- Associated gynecologic conditions: endometriosis, leiomyomas, & rarely endometrial cancer.
- TVUS imaging is as accurate as MRI
- 3-dimensional TVUS is superior to 2-dimensional TVUS
- MRI is useful to differentiate myomas & staging Ut cancer
- FIGO has recently revised its diagnostic criteria for diagnosis of AUB (A) - Adenomyosis. (2018)

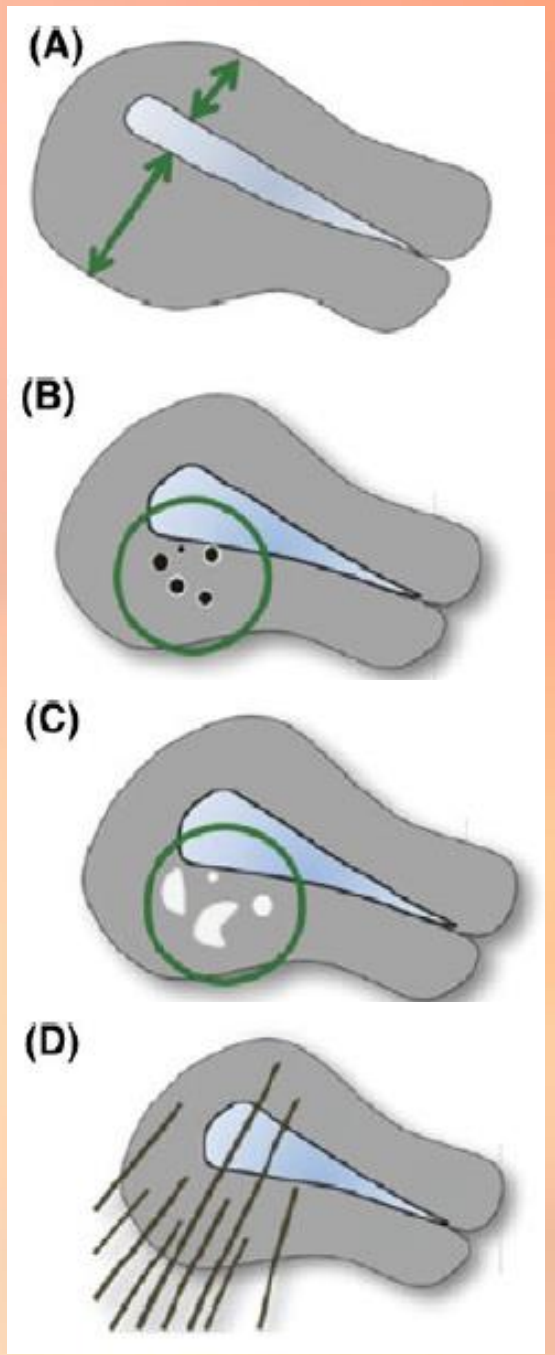
AUB-A: Adenomyosis diagnosis

(A) Asymmetrical myometrial thickening

(B) Myometrial cysts

(C) Hyperechoic islands

(D) Fan shaped shadowing



(Given by: MUSA- Morphological Uterus Sonographic Assessment)

AUB-A: Adenomyosis diagnosis

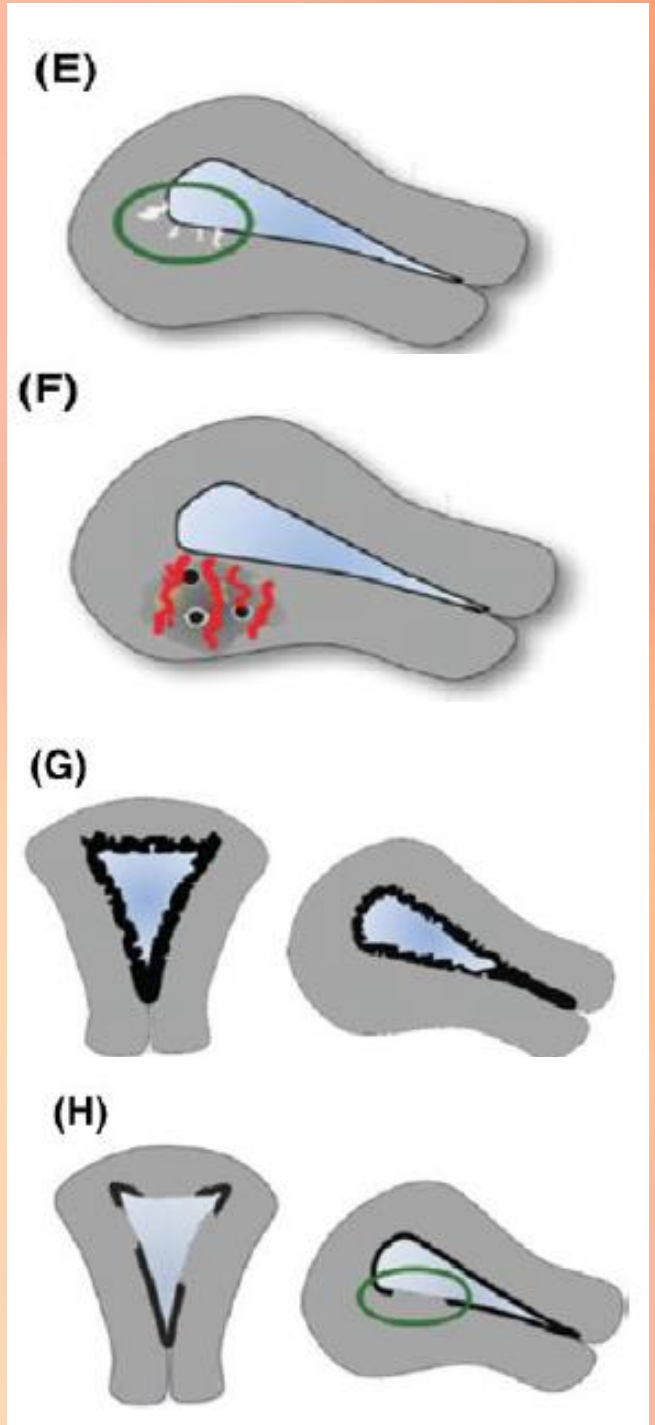
(E) Echogenic subendometrial lines and buds

(F) Translesional vascularity

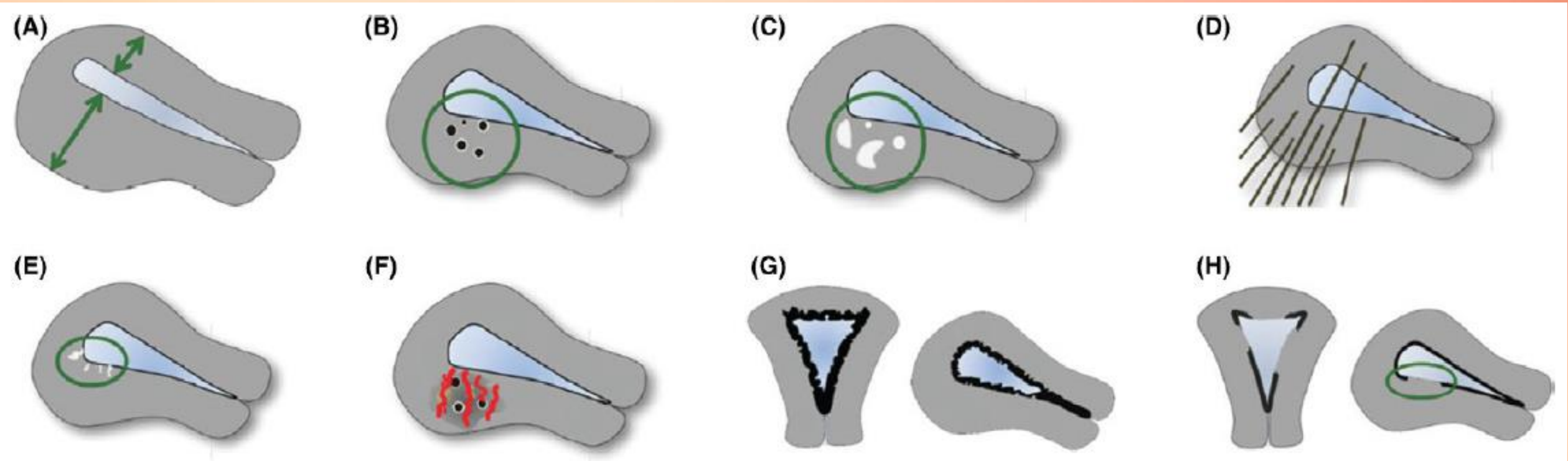
(G) Irregular junctional zone

(H) Interrupted junctional zone

(Given by: MUSA- Morphological Uterus Sonographic Assessment)



AUB-A: Adenomyosis diagnostic criteria



Evaluation of the junctional zone is best accomplished with three-dimensional USS. The presence of 2 or more of these criteria are associated with a diagnosis of adenomyosis.

QUESTION 3

(A) How does wound healing occur? (5)

(B) What steps that can be taken to minimize risks of dehiscence of a cesarean scar? (5)

Reference: Te Linde 9th Ed

A. Wound Healing : Definitions

- **Wound**: A cut or break in the continuity of skin or any tissue, caused by injury or operation.
- A cesarean incision is a ‘Clean Contaminated’ wound.
- **Healing** refers to the restoration of tissue architecture and function after an injury.
  - Regeneration - Epidermis of skin, GI tract & Liver
  - Scar formation – by connective tissue deposition.

PHYSIOLOGY OF WOUND HEALING

The healing of wound involves the following process

- Inflammation
- Epithelization
- Fibroplasia
- Wound contraction
- Scar maturation.

PHYSIOLOGY OF WOUND HEALING

- **Inflammation**: (vascular and cellular responses)
  - Vascular: Vasoconstriction ± Oedema
  - Cellular: Migration of leucocytes onto injured area
- **Epithelization**: Migration & maturation of immature epithelial cell from deeper basal layer
- **Fibroplasia**: Differentiation of mesenchymal cells into fibroblasts, migrate into the wound, & manufacture glycoprotein & MPS (ground substance of connective tissue)

PHYSIOLOGY OF WOUND HEALING

- **Fibroplasia**: Ground substance induces collagen formation. Fibroblasts produce tropocollagen, which polymerize into collagen fibrils& bundles by 4-5 days of injury.
- **Wound contraction**: When a large amount of tissue is missing the edges of the wound are brought closer together by contraction, from D5, due to contractile proteins within the fibroblasts.

PHYSIOLOGY OF WOUND HEALING

- **Scar Maturation**: Bulky scar formed during fibroplasia phase is unorganized randomly arranged soluble collagen fibers.
- During scar maturation the disordered fibers are replaced with fibers arranged in a more orderly fashion producing a denser and stronger scar, increasing the wound tensile strength over the next few years.

Minimize risks of dehiscence - cesarean scar

(B) Wound dehiscence is a dreaded postoperative complications associated with all abdominal surgery.

- It means separation of all layers of abdominal incision.
- It can be caused due to various factors like poor nutritional status, hematoma, chronic steroid use, type of incision, technique of closure, choice of suture material, infection.

Minimize risks of dehiscence - cesarean scar

General Measures:

- Improve poor nutritional status of patient
- Follow principles of surgery: Prophylactic antibiotic / Maintain sterility / Ensure hemostasis

Specific Measures:

- Type of incision- transverse incisions have lower rates of dehiscence than vertical incisions.

Specific Measures:
Suture Material & Technique

- **Fascia** closure with continuous delayed absorbable suture.
- **Subcuticular** Tissue (if depth ≥ 2cm) with interrupted absorbable monofilament suture.
- In very obese: Irrigation with saline & subcuticular drain can be placed to avoid hematoma/seroma.
- **Skin:** Absorbable monofilament suture. Mattress sutures have less risk than subcuticular sutures.


thank you