核心課程編號：E15

基本傷口縫合技術

急診部 陳一心醫師/施長志醫師

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第二版

學習目標

PGY

知識

1. 瞭解基本皮膚縫合 (simple loop、mattress) 與真皮縫合 (dermostitch) 方法的特性及適應症，並熟悉此二技術。
2. 熟悉緊急縫合的事前準備。
3. 瞭解縫合相關禁忌症並能辨識複雜傷口，決定會診時機。
4. 能夠正確執行縫合後之衛教 (包含傷口觀察、換藥與拆線時機)。

瞭解縫合相關禁忌症並能辨識複雜傷口，決定會診時機

傷口評估

- 所有外傷病患仍以A.B.C優先評估
- 受傷機轉: 壓砸傷、切割傷、鈍傷
- 受傷時間: 一般傷口應在受傷後12小時內縫合，臉部傷口可延至24小時以內
- 傷口種類: 擦傷、挫傷(瘀傷)、撕裂傷
- 污染程度: 一般程度、汙染性高(動物咬傷、水溝、泥巴)的傷口須清創沖洗，通常不建議立刻縫合
- 異物存留: 是否有玻璃、木屑、金屬物
- 合併傷害: 是否有肌腱、韌帶、神經及血管之損傷

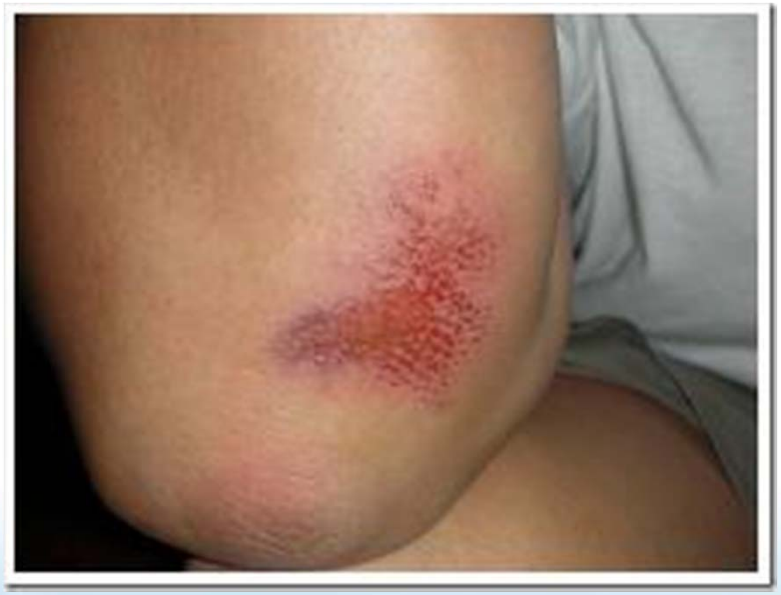
Pertinent Medical History (1)

Symptoms
Pain, swelling, paresthesias, muscle weakness
Type of force causing injury
Crush (blunt) or shear (sharp)
Bite or puncture
Elements of contamination
Time elapsed from injury until initial cleansing
Time elapsed from injury until presentation
Wound care performed prior to ED arrival
Object that caused injury (glass, wood, etc.)
Cleanliness of body and environment at time of injury and afterward
Factors resulting in injury
Intentional vs. unintentional
Occupation or nonoccupation related
Assault or self-inflicted

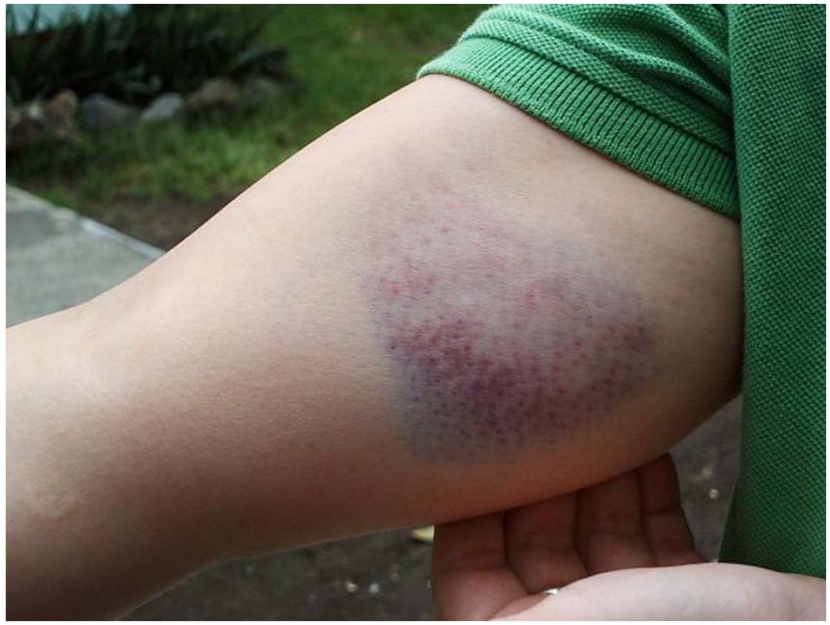
Pertinent Medical History (2)

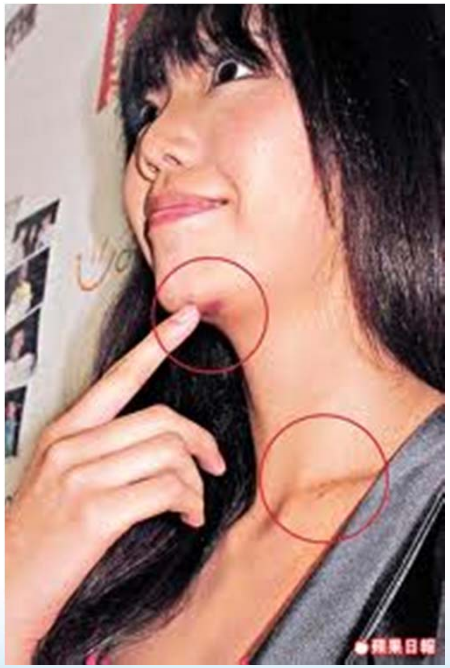
Factors resulting in injury
Intentional vs. unintentional
Occupation or nonoccupation related
Assault or self-inflicted
Foreign body potential
Did the object break or shatter?
Foreign body sensation
Removal of portion of object
Function
Occupation and handedness
Allergies
Anesthetics, analgesics, antibiotics, and latex
Medications
Chronic medical conditions that increase risk of infection
Chronic medical conditions that increase likelihood of poor wound healing
Previous scar formation (hypertrophic scars or keloids)

擦傷



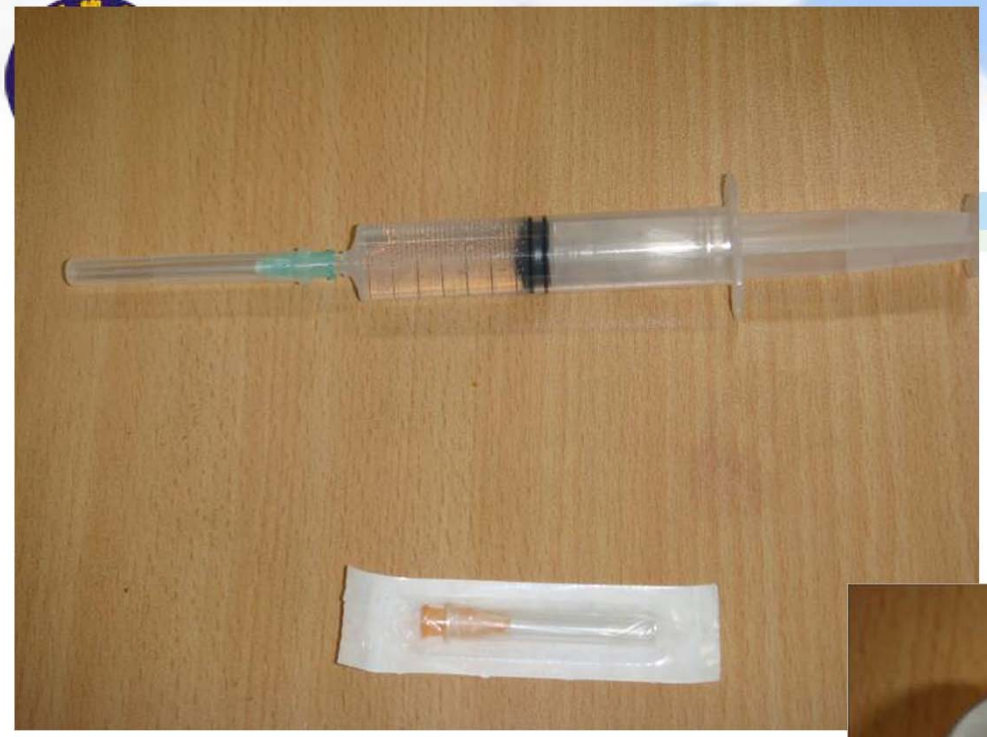
挫傷(瘀傷)

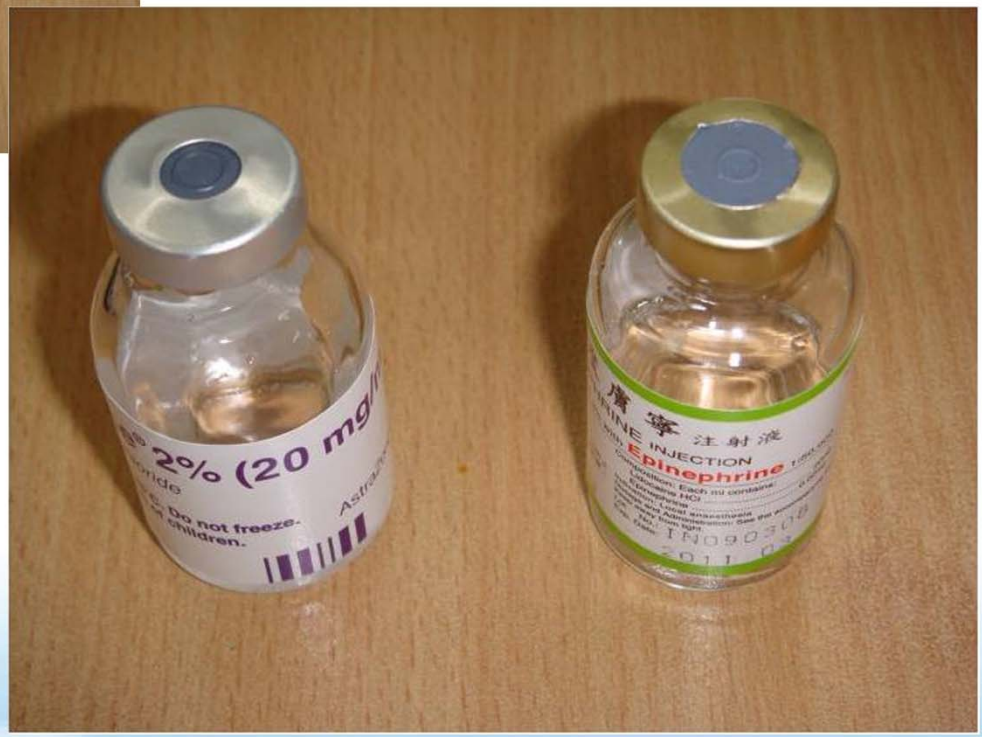


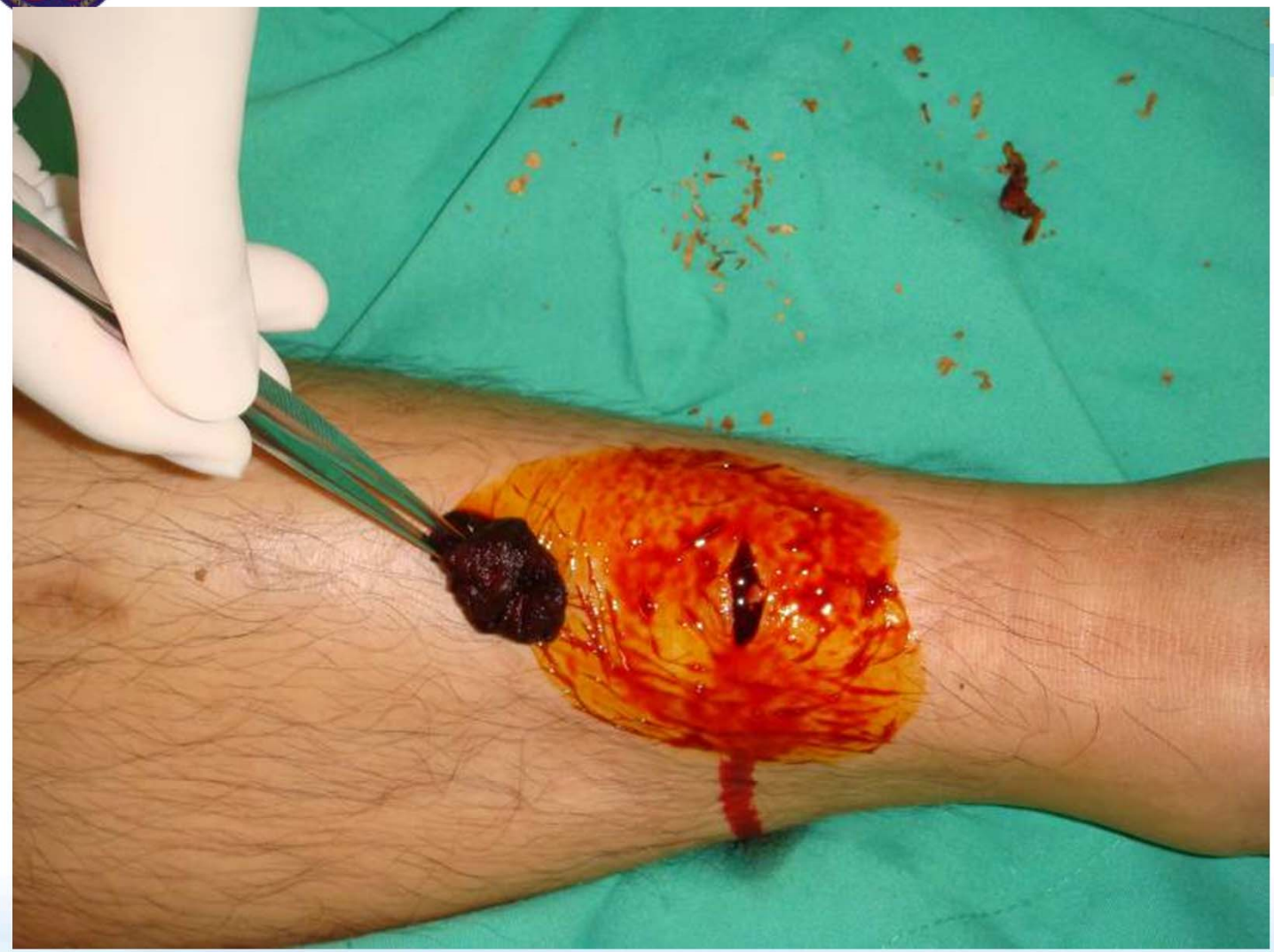


撕裂傷、壓砸傷

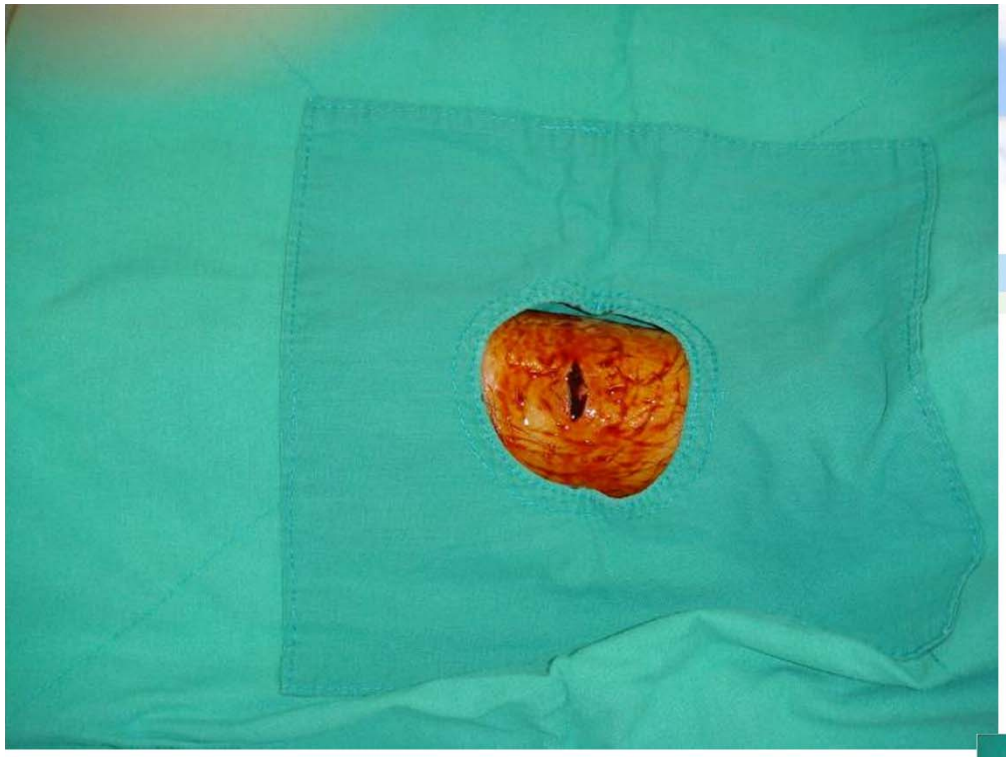
局部麻醉



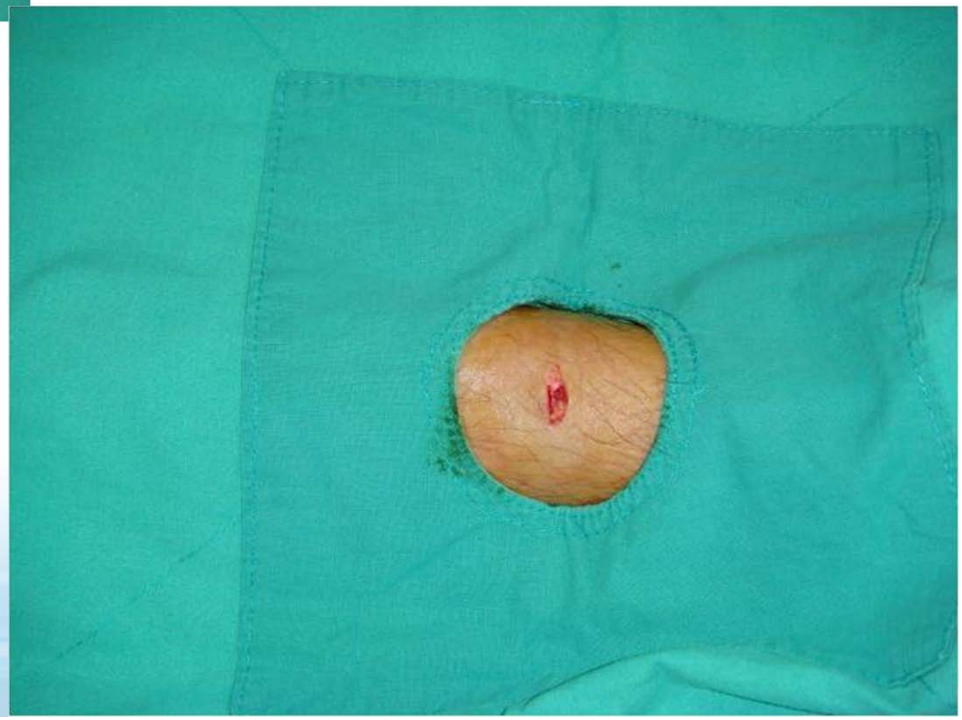




消毒



無菌鋪單



Suturing Guidelines for the Face and Scalp(1)

Area	Suture	Size	Anesthetic	Removal
Scalp				
Galea	Absorbable	4-0	Local	Not removed
Skin	Staples	Standard	Local	10 d
	Nonabsorbable monofilament	4-0	Local	10 d
	Rapidly absorbing	4-0	Local	Not removed
Forehead				
Frontalis muscle	Absorbable	4-0	Local or supraorbital	Not removed
Skin	Nonabsorbable monofilament	5-0 or 6-0	Local or supraorbital	5 d
	Tissue adhesive	May need deep layer	—	Not removed
Cheek and face				
Muscle or subcutaneous	Absorbable	4-0	Local or infraorbital	Not removed
Skin	Nonabsorbable monofilament	6-0	Local or infraorbital	5 d
	Tissue adhesive	May need deep layer	—	Not removed

Suturing Guidelines for the Face and Scalp (2)

Eyelids				
Skin	Nonabsorbable monofilament	6-0 or 7-0	Supra- or infraorbital	3 d
Nose				
Mucosa	Rapidly absorbing	4-0	Intranasal pack	Not removed
Cartilage	Absorbable	5-0	Intranasal pack	Not removed
Skin	Nonabsorbable monofilament	6-0	Intranasal pack	3–5 d
Ears				
Skin	Nonabsorbable monofilament	6-0	Auricular block	5 days
Lips				
Mucosa	Rapidly absorbing	5-0	Local, infraorbital, or mental	Not removed
Muscle	Absorbable	4-0 or 5-0	Local, infraorbital, or mental	Not removed
Skin	Nonabsorbable monofilament	6-0	Local, infraorbital, or mental	3–5 d

傷口處理及縫合

- **自然癒合:**

  一般的擦傷及很小的撕裂傷，傷口經上皮化(epithelization)癒合，通常不會留下疤痕。

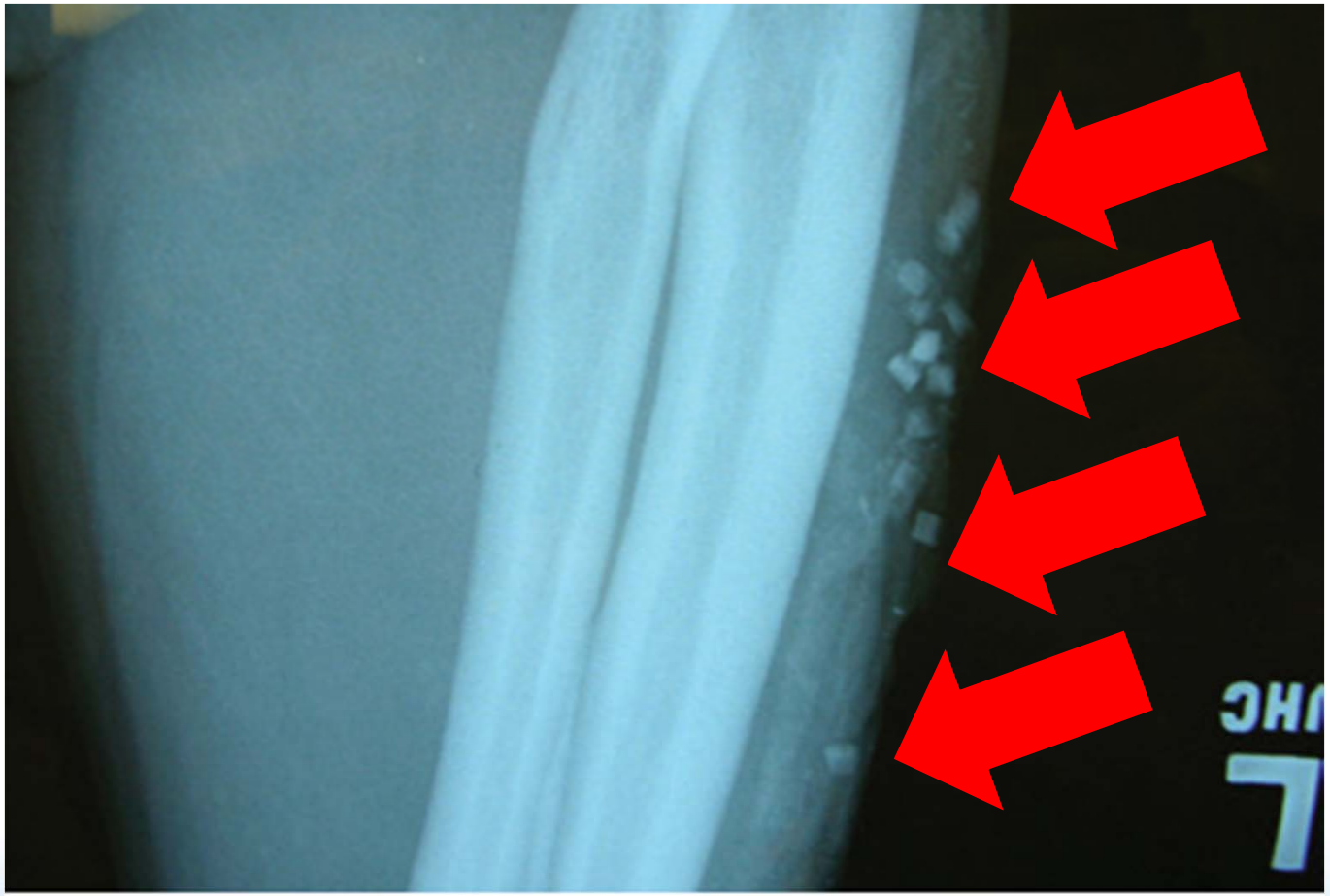
- **初級縫合 (primary suture):**

  一般撕裂傷經處理後，立即縫合。

- **延遲初級縫合 (delayed primary suture):**

  汙染程度高的撕裂傷，通常先清創消毒傷口，包紮，一般待72小時後，評估傷口穩定再予縫合。

Multiple glass fragments evident



Source: Tintinalli JE, Stapczynski JS, Ma OJ, Cline DM, Cydulka RK, Meckler GD: *Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 7th Edition*: http://www.accessmedicine.com

Risk of Wound Infection as a Function of Anatomic Location

Location	Risk of Infection (%)
Head and neck	1–2
Upper extremity	4
Lower extremity	7

Risk of Wound Infection as Function of Time from Injury to Closure

Comments	Distinction between Early and Late Closure (h)	Infection Rate/Inadequate Healing with Early Closure	Infection Rate/Inadequate Healing with Late Closure
Hand and forearm; all patients received IM penicillin and half received PO clindamycin	4	10/148 (7%)	14/69 (21%)
Children, 59% head and neck location	6	32/2665 (1.2%)	2/147 (1.3%)
All locations	19	8/97 (8.2%)	25/107 (23.4%)
Head	19	2/44 (5%)	1/36 (3%)
Trunk and extremities	19	6/53 (11.3%)	24/71 (33.8%)

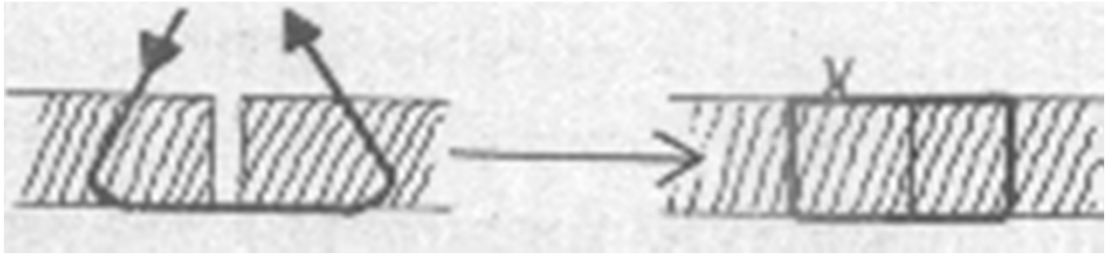
緊急縫合的事前準備

初步處理

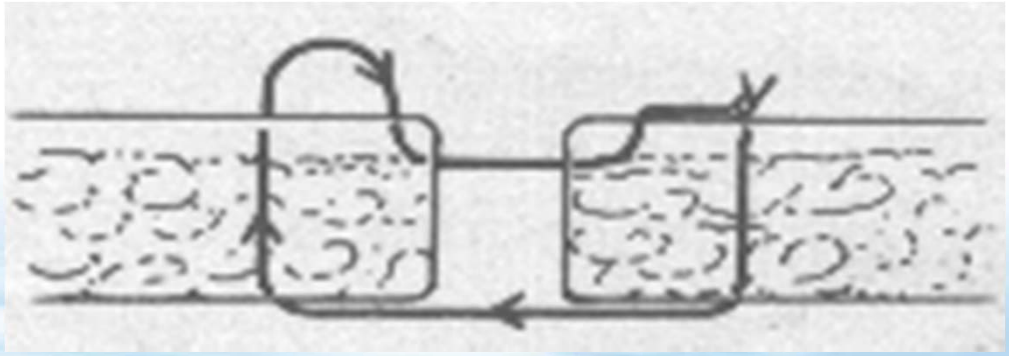
- 止血: 大部分可用**直接加壓法**止血，少數需要特殊止血方法如**電燒、手術結紮**等。
- 以**剪刀**修剪傷口周圍之毛髮(**注意:眉毛不可剃除**)
- 疼痛控制: 局部麻醉(1% lidocaine, 4-5 mg/kg)，以25或27號針頭注射，通常於**傷口內側**注射；若病人疼痛嚴重則可先給止痛藥肌肉注射。
- 傷口消毒
- **生理食鹽水沖洗傷口**，清除傷口異物和壞死組織，並仔細檢查傷口

基本皮膚縫合 (simple loop、mattress) 與真皮縫合 (dermostitch) 方法的特性及適應症

基本縫合技術(1)



Simple suture



Vertical mattress

基本縫合技術(2)

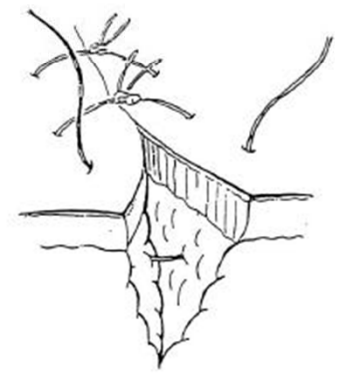


Fig. 5.60 The *simple suture* should have a square profile to avoid inverting skin edges. This is accomplished as shown in Figures 5.64–5.68. A good general rule for placement is that the width of each stitch equals the distance between sutures. The width varies with the thickness of the skin, the location, and the purpose of the suture.

Several basic suture patterns are presented in the next three pages, with elaboration on skin suture technique. Stitches used for abdominal closure and retention sutures are discussed in the chapter on laparotomy.

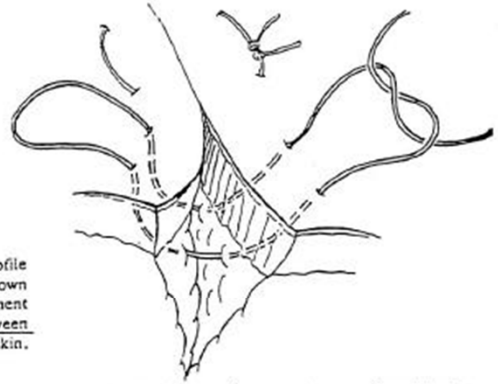


Fig. 5.62 The *horizontal mattress* is an everting stitch that is more commonly used in fascia than in skin.

Horizontal mattress

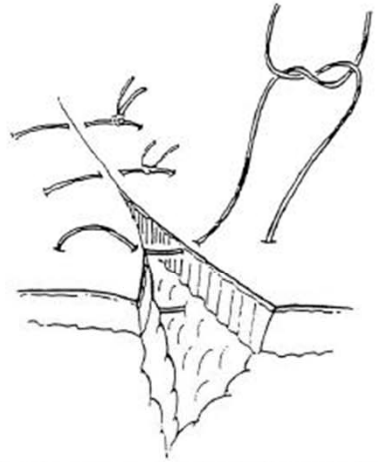


Fig. 5.61 The *vertical mattress* is used when precise edge approximation is important and cannot be achieved with a simple suture. This is the most common skin closure pattern. It consists of two tiny epidermal-thickness bites at the edges added to the simple suture. Gentle, loose approximation allows for the edema that inevitably follows wounding.

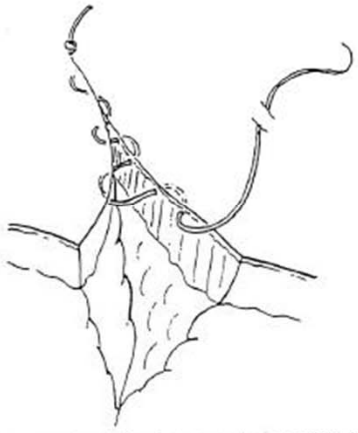
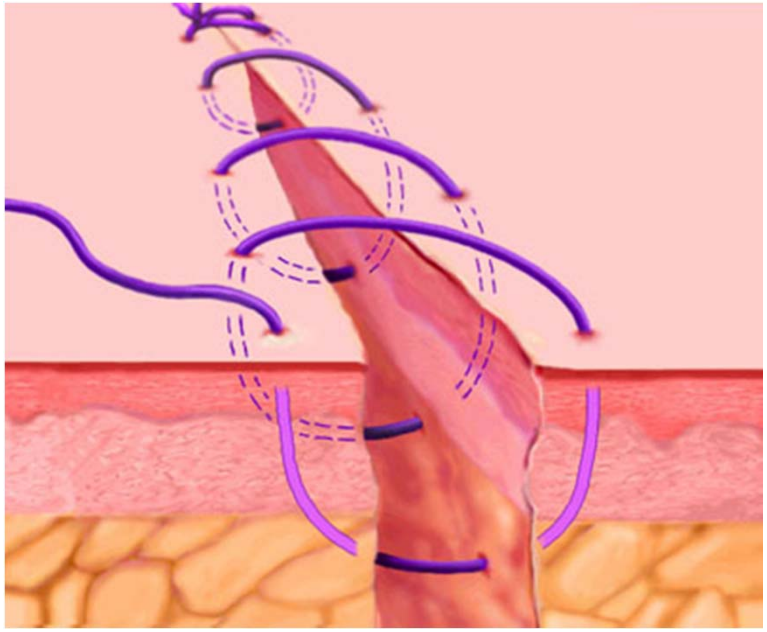


Fig. 5.63 The *subcuticular closure* may be interrupted or continuous. It may be done with absorbable or nonabsorbable material. In the former case the end knot is usually buried. The technique is discussed in more detail in the section on minor surgery.

Subcuticular

基本縫合技術(3)



基本縫合技術(4)

Continuous suture

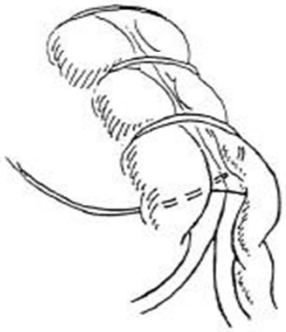


Fig. 5.69 The simple over and over *continuous suture* is the one most often used on bowel. The continuous suture is quicker than the interrupted suture and may distribute tension more evenly. Care must be exercised not to pull too tightly, however, or a rigid purse string results, which can compromise the lumen at an anastomosis. Another disadvantage of continuous suture is that a single break compromises the entire suture line. The needle should be released and the suture periodically untwisted when doing a long continuous row. The surgeon sets the tension for each stitch of a continuous suture and the assistant holds the strand at that tension while the next stitch is placed.

Continuous locking suture

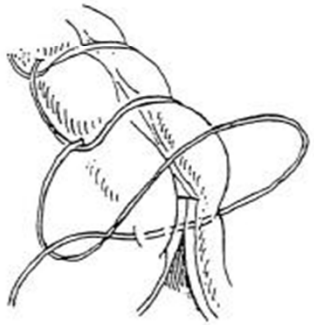


Fig. 5.70 A *continuous locking suture* is created by passing the needle through the loop of the previous stitch. The purpose is to prevent slippage and to aid hemostasis in a cut edge. The assistant flips the loop over so that the surgeon automatically withdraws the needle through it.

Continuous inverting suture

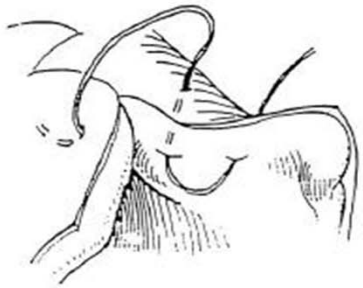
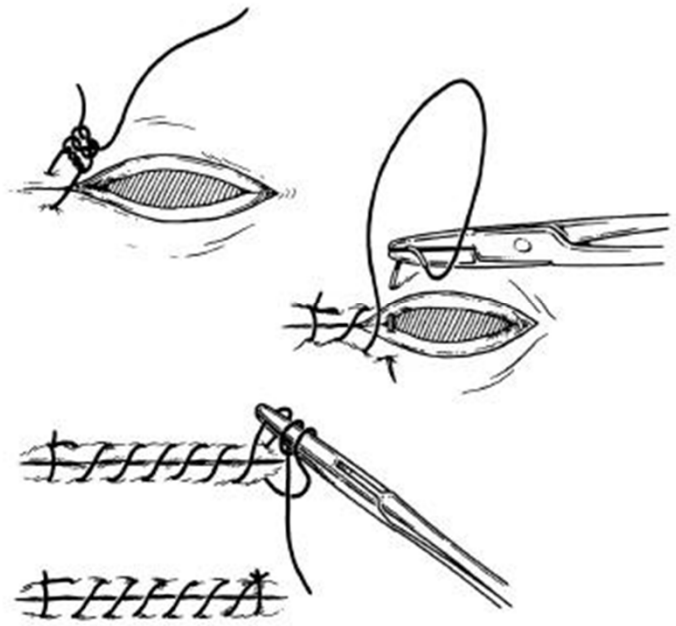


Fig. 5.71 The *Connell* stitch is a continuous inverting suture commonly used for the first layer (anterior wall portion) of a bowel anastomosis. The technique is discussed with small bowel resection.

基本縫合技術(3)

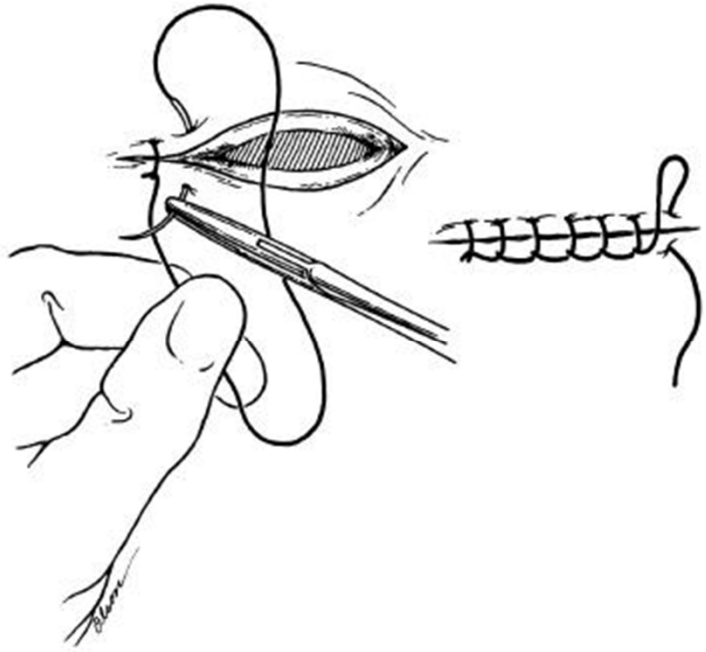
Figure 24
Basic running stitches



Basic running stitches

特殊縫合技術(1)

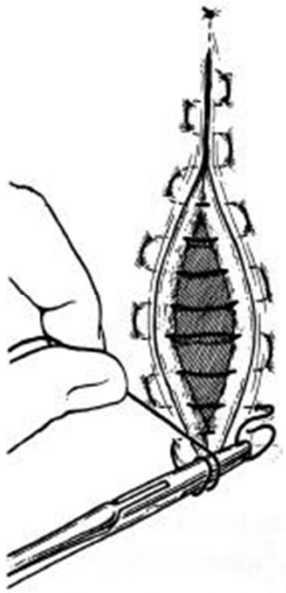
Figure 25
Running locked stitch



Running locked stitches

特殊縫合技術(2)

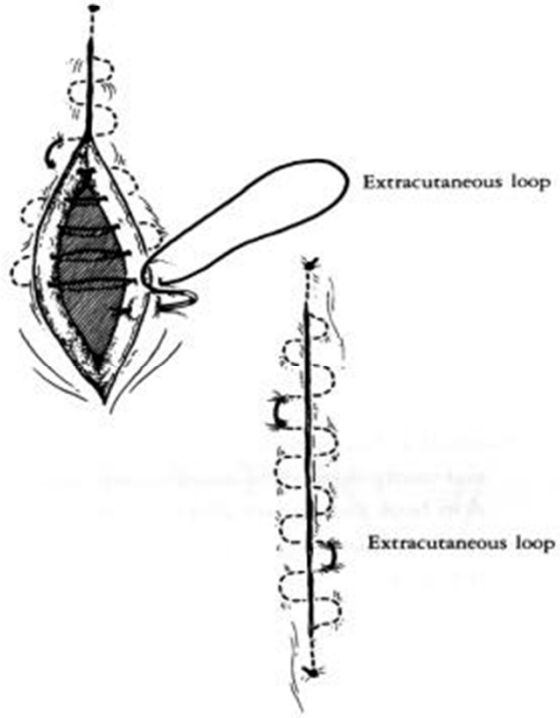
Figure 26
Running horizontal
mattress stitch



Running horizontal suture

特殊縫合技術(3)

Figure 27
Running subcuticular stitch



Running subcuticular stitch

特殊縫合技術(4)

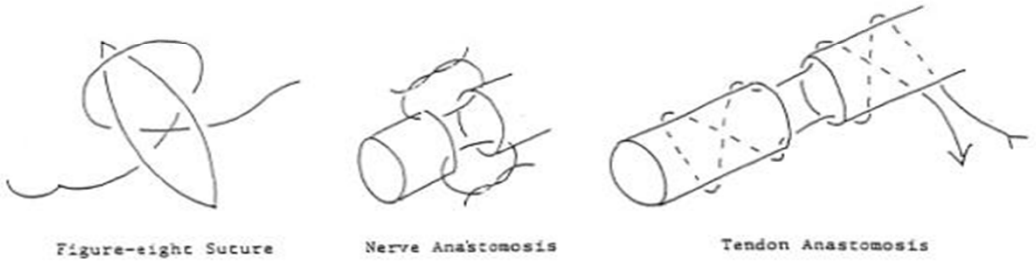
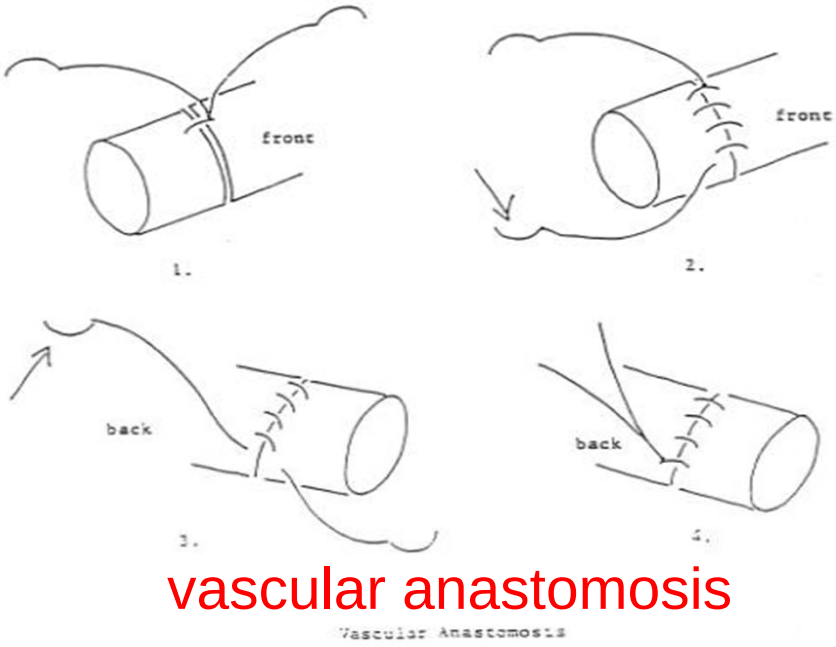


Figure-eight

Nerve anastomosis

Tendon anastomosis



vascular anastomosis

縫合後之衛教(包含傷口觀察、換藥與拆線時機)

傷口縫合後照顧注意事項(1)

- (一)一般傷口縫合後48小時內，如傷口無異狀，不需要換藥，出院後，安排於二日後回門診追蹤，由醫師診視傷口。
- (二)在癒合期間內須注意是否紅腫熱痛的現象，傷口必須保持清潔乾燥，待傷口癒合後方可淋浴，若傷口不小心弄濕，請用乾淨紗布擦乾。
- (三)運動及飲食：與日常生活一樣，不須特別進補，但應避免進食較刺激的食物。

傷口縫合後照顧注意事項(2)

- (四)出院後，若有發燒至體溫38℃以上、傷口有不正常分泌物及持續出血時，須立即返院檢查。
- (五)一般傷口視傷口狀況於一至二週拆線，一般於出院一週後再回診，由醫師診室後決定何時拆線。

拆線時間

❖一般情況下，拆線時間為

臉部: 5天

頭皮: 7天

四肢(非關節): 7-10天

軀幹: 10-14天

四肢(關節處): 14-21天