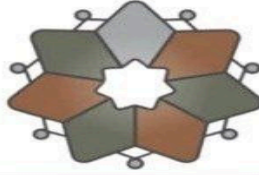


جَائِزَةُ الْحُسَيْنِ
بْنِ عَبْدِ اللَّهِ الثَّانِي
لِلْعَمَلِ التَّطَوُّعِيِّ
AL HUSSEIN BIN ABDULLAH II
AWARD FOR VOLUNTARY WORK



النادي الطبي
Medical Club



General Surgery



Subject: Burns

Group no:

Done by: Aishah Khaled



Burn

→ Injury or trauma
(multi trauma)



Trauma → Isolated trauma
↳ Multi trauma

Thermal Injury

Thermal Trauma

Zone of coagulation (1)

هاي المركز → فيها irreversible damage (الأنسجة ماتت).

Zone of stasis (2) ← هاي هي ال critical area

هاي المنطقة الوسطى → ترويتها ضعيفة (ischemia)

- ممكن تتحسن وتعيش
- أو تسوء وتصير necrosis

👉 عشان هيك بنعتبرها critical لأنها قابلة للإنقاذ أو الخسارة حسب التدخل (fluid resuscitation, oxygenation ...)

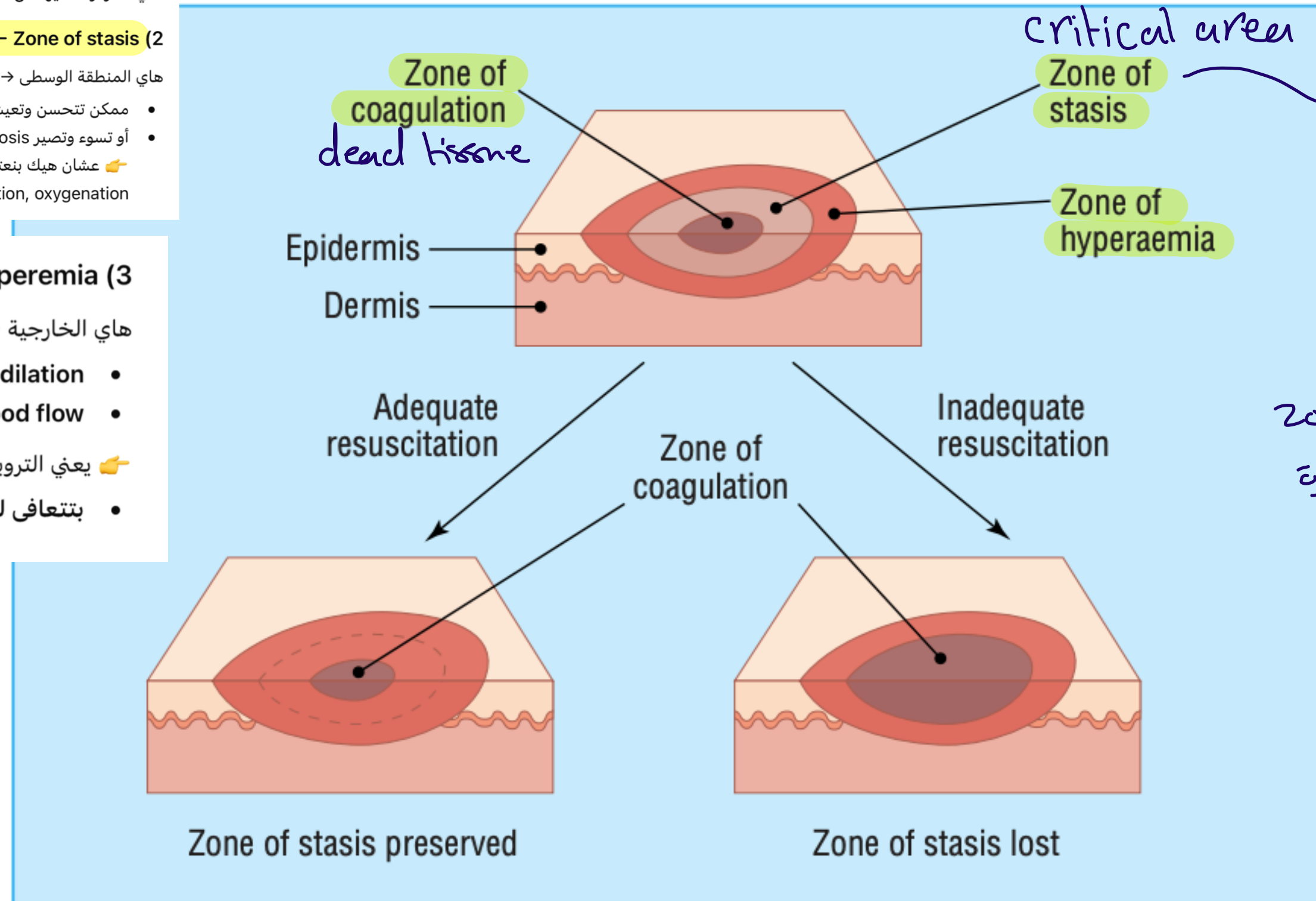
Zone of hyperemia (3)

هاي الخارجية → فيها:

- vasodilation
- increased blood flow

👉 يعني التروية ممتازة، والأنسجة غالبًا:

- بتتعافى لحالها (reversible injury)



مكنه نافظ عليها
لو عملنا منه الاول
good resuscitation
+ management
Zone of coagulation لو
ماضي اقول منها لاني عبارة
عن انسيبة صيرة

ABCDE

to pick up any life-threatening
condition and rapidly manage it



Primary survey

secondary survey (for stable patient)



Detailed history

+

Physical examination

كلما كان الكبرف Deep أكثر كلما كان ال complication أعلى

وال Scar رح يكون ظاهر أكثر، والتدخل الجراحي أصعب

- حركه مرين ييجي ب Second degree burn و يند أسبوعيه بالمستشفى

ينحلل management، والمرين يدير ب Fourth degree burn

بسبب ال Infection ← عامل أساسي ورئيسي في زيادة Degree & degree of burn

Depth of burn

Percentage of body surface area (BSA) estimation

← لها علاقة ب criteria for Admission و كمية ال fluids الي رح نعطها

وتدخد في complication & mortality rate

↑ surface area : ↑ mortality rate

Criteria (Indication) For Admission :-

1. Partial-thickness burns greater than 10% BSA.

2. Any full-thickness burn. Fourth degree (exposed bone, tendon) ↑ complication

3. Burns that involve the face, hands, feet, genitalia, perineum, or major joints. + Axillary area + neck

need good hydration + monitor urine output

(Infection, Poor healing, bad scarring)

4. Any inhalation, chemical, or electrical injury (including lightning). → immediately ICU

5. Burn injury in patients with pre-existing medical conditions

due to risk for

6. Burns in combination with ~~significant~~ associated mechanical trauma. Rhabdomyolysis

7. Burned children in hospitals without qualified personnel or equipment

lead to Acute Kidney injury, cardiac arrhythmia,

for the care of children. ← مش شرط بس للأطفال، أي مريض لا يتلقى العناية المناسبة الكافية

8. Patients requiring specialized rehabilitation, psychological support, or social services (including suspected neglect or child abuse). ← بمستشفى القريب منه بنظرة المستشفى

compartment syndrome

9. Extreme ages (< 12 years or > 50 years) + $< 10\%$ → Admission

↳ whether there is comorbidities or not

10. Circumferential burn (need surgical procedure "escharotomy") → Incision through burned tissue

- middle age + $< 10\%$ of BSA with no comorbidities → out patient

سudden

laryngeal

Anapnoea

ف لازم نأخذها

Prophylactic

Intubation

لأنه بعد حروق

Intubation

صعب نقل

In Inhalation burn we must perform prophylactic intubation depend on clinical assessment (history) no need for imaging

کیف اعراف و انگریز تعریف ال Inbulational عہ طریقہ ال history

1. closed space
2. Smoke دخان و آتش آلودگی
3. time of contact قریب الی غیر ضابطه

PE: Facial burn (loss of hair in nasal part), hoarseness, soot on face
soot on nose, mouth, cough with black sputum, dry mouth

بنیاد کی ہائیڈرو signs نڈز قرار وضع Prophylactic Intubation

مش ضروري كذا يكون موجوده وما بنسبتي ال Investigation لنقرر

Epidermis → first degree
Papillary dermis → second to third

Epidermis + dermis → fourth degree

Depth	Level of Injury	Clinical Features	Result/Treatment
Superficial (first degree)	Epidermis	Dry, red; blanches; painful	Healing time 3–6 days, no scarring
Superficial partial thickness (superficial second degree)	Papillary dermis	Blisters; moist, red, weeping; blanches; severe pain to touch	Cleaning; topical agent; sterile dressing; healing time 7–21 days; hypertrophic scar rare; return of full function
Deep partial thickness (deep second degree)	Reticular dermis; most skin appendages destroyed	Blisters; wet or waxy dry; reduced blanching; decreased pain sensation to touch, pain present to deep pressure	Cleaning; topical agent; sterile dressing; possible surgical excision and grafting; scarring common if not surgically excised and grafted; earlier return of function with surgery
Full thickness (third degree)	Epidermis and dermis; all skin appendages destroyed	Waxy white to leathery dry and inelastic; does not blanch; absent pain sensation; pain present to deep pressure; pain present in surrounding areas of second-degree burn	Treatment as for deep partial-thickness burns plus surgical excision and grafting at earliest possible time; scarring and functional limitation more common if not grafted
Fourth degree	Involves fascia and muscle and/or bone	Pain to deep pressure, in the area of burn; increased pain in surrounding areas of second-degree burn	Healing requires surgical intervention

superficial ~✓✓✓
Painful ~✓

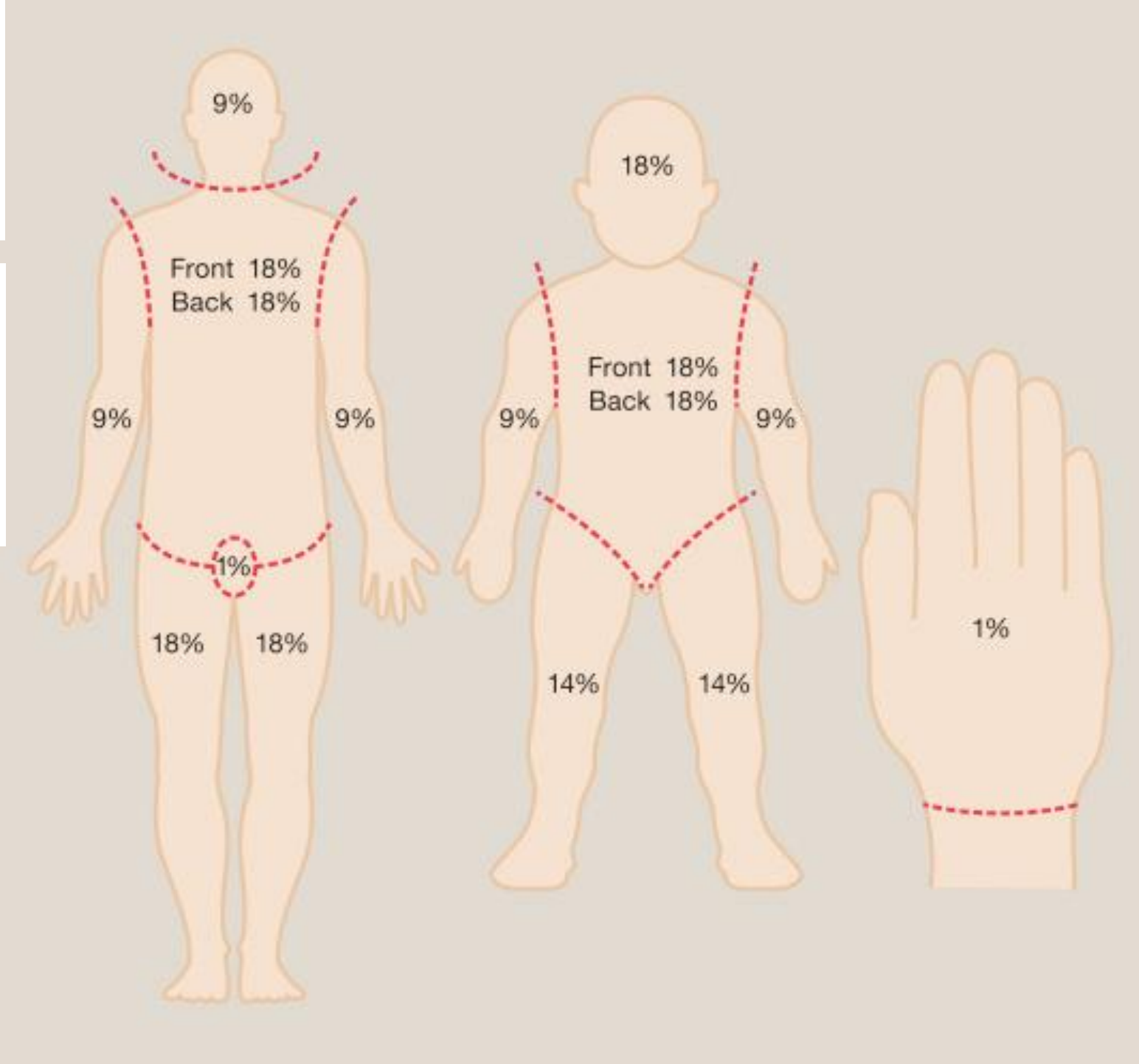
Burn Surface Area Estimation

:Rule of 9 .1

- A rapid method to estimate **Total Body Surface Area (TBSA)** in adults
- The body is divided into anatomical regions, each representing **9% or multiples of 9%**
- Example distribution: head and neck (9%), each arm (9%), anterior trunk (18%), posterior trunk (18%), each leg (18%), perineum (1%)
- **Best used for large and extensive burns**
- Helps guide **fluid resuscitation and severity assessment**

:Palm Method .2

- Uses the patient’s own hand as a reference
- The **palm including fingers $\approx$ 1% TBSA**
- Useful for estimating **small, scattered, or irregular burns**
- Can be repeated over different areas to sum the total burned surface
- Less accurate for large burns, but very practical in quick assessments



MANAGEMENT

we deal with these

Patients as trauma

- ABCDE

Resuscitation

IV fluids, blood,
medication, O₂

Volume of Ringer's lactate =
 $4 \text{ mL} \times \% \text{ BSA} \times \text{weight (kg)}$

$\frac{1}{2}$

$\frac{1}{2}$

First 8 hours

Next 16 hours

← من بداية الـ 1st event
من وقت

Admission or
Presentation

Wound Care

لنطقة الكرو

بیکرہ بشکریہ

→ Remove dead or damaged tissue

Early irrigation and debridement

Topical antimicrobial agents

Poor blood supply
to burn area, so we
use topical

↓
good penetration ✓
Broad spectrum ✓

Systemic antibiotics for pt with comorbidities
as immunocompromised (↑ risk of infection, septicemia)

Dressings

Biologic dressings include allograft (cadaver skin) and xenograft

Synthetic dressings *(most commonly used)*

Biobrane

Trancyte

Integra

most commonly used

Antimicrobial agent	Coverage	Advantages	Disadvantages
Silver sulfadiazine	Broad spectrum especially <i>Pseudomonas</i>	Soothing, no metabolic complication	Poor eschar penetration May impede epithelial cell migration (post-burn neutropenia)
Mafenide acetate	Broad spectrum including <i>Clostridium</i>	Good eschar penetration, excellent for both treatment and prophylaxis	Carbonic anhydrase inhibition with secondary metabolic acidosis, painful
Silver nitrate	Broad spectrum (gram positive and negative)	Excellent prophylaxis	Poor eschar penetration, hyponatremia, methemoglobinemia, black staining
Bacitracin	Gram-positive bacteria	Good for shallow facial burns	Expensive
Mupirocin	Methicillin-resistant <i>Staphylococcus</i>	Excellent for methicillin-resistant <i>Staphylococcus</i>	Very expensive
Acticoat	Broad coverage	Good for shallow burns, grafts and donor sites	Hides wound, non-adhesive and slips from wound

صحة فخره ۳ أيام على المريض في بخف stress و ۴م على المريض

Operative Management

Escharotomy *Emergency* if there are signs of compartment syndrome
tangential excision of burn **eschar** *Any burned tissue*
excision and grafting

- pt with burn in arm, circumferential
signs: tense, edema, congestion → at
risk of compartment syndrome so
we do escharotomy

- * **Signs of compartment (ischemia) 5P**
 1. **Pain**
 2. loss of function (**Paralysis**)
 3. **Paresthesia**
 4. **Pallor**
 5. **Pulseless** (Advanced)
 6. coldness

Inhalation burn

Electrical burn

need
immediate

Admission
to ICU

Chemical Burns

Compartment Syndrome

Care related complications

.Pneumonia:

- Sepsis *(especially in immunocompromised patients)*
- Gastrointestinal complications: Ileus and ulceration
↳ functional obstruction (stress condition as burn)
- Renal failure: Acute tubular necrosis (ATN) from hypoperfusion
- Shock: Inadequate end-organ perfusion

Surgical

- Graft loss
- Burn scar contracture → need physical therapy + Surgical release (Z plasty)
 - ↳ when burn involves a joint