INFECCIÓN DE PIEL Y PARTES BLANDAS

DRA CRISTINA MARTÍN GÓMEZ

U. ENFERMEDADES INFECCIOSAS/MED. INTERNA

IMPÉTIGO

CELULITIS Y ERISIPELA

INFECCIÓN NECROTIZANTE

PIE DIABÉTICO INFECTADO

MORDEDURA HUMANA O ANIMAL

INFECCIÓN DE HERIDA EXPUESTA A AGUA CONTAMINADA

INFECCIÓN DE HERIDAS TRAS MANIPULAR CARNE O PESCADO

INFECCIÓN PROFUNDA DE HERIDA QUIRÚRGICA

INFECCIÓN ÚLCERA POR PRESIÓN/SEPSIS

INFECCION DE HERIDA POR PUNCIÓN EN PLANTA DE PIE

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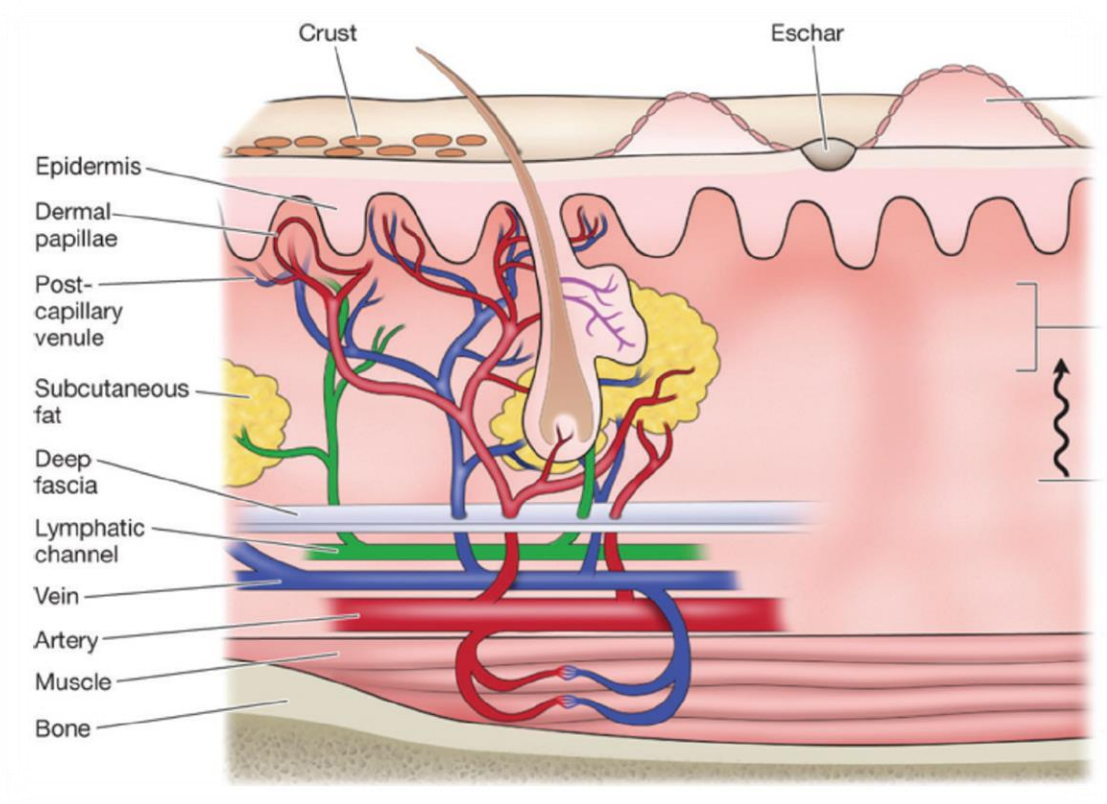
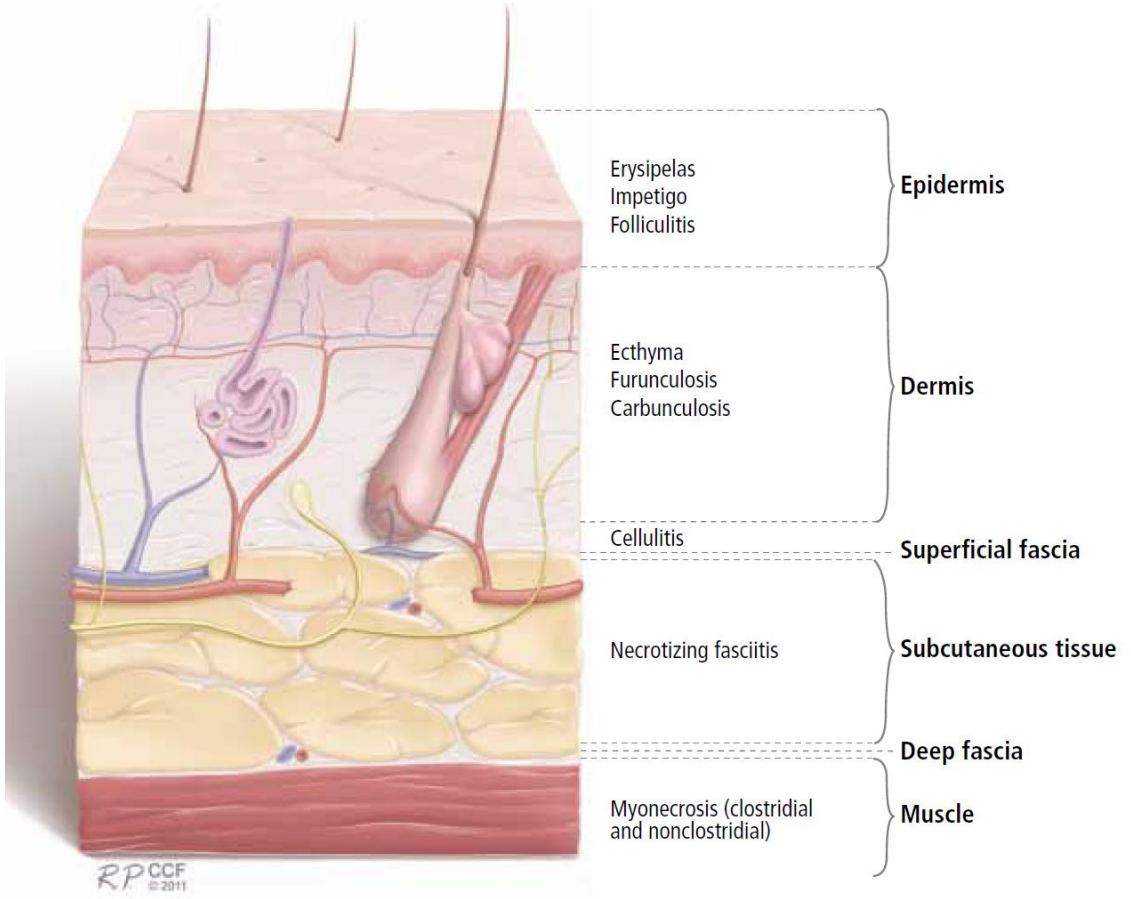
https://www.saludcastillayleon.es/CAZamora/es/comisiones-hospitalarias/grupo-proa-za

INFECCIÓN ÚLCERA POR PRESIÓN/SEPSIS

INFECCION DE HERIDA POR PUNCIÓN EN PLANTA DE PIE

CLASIFICACIÓN





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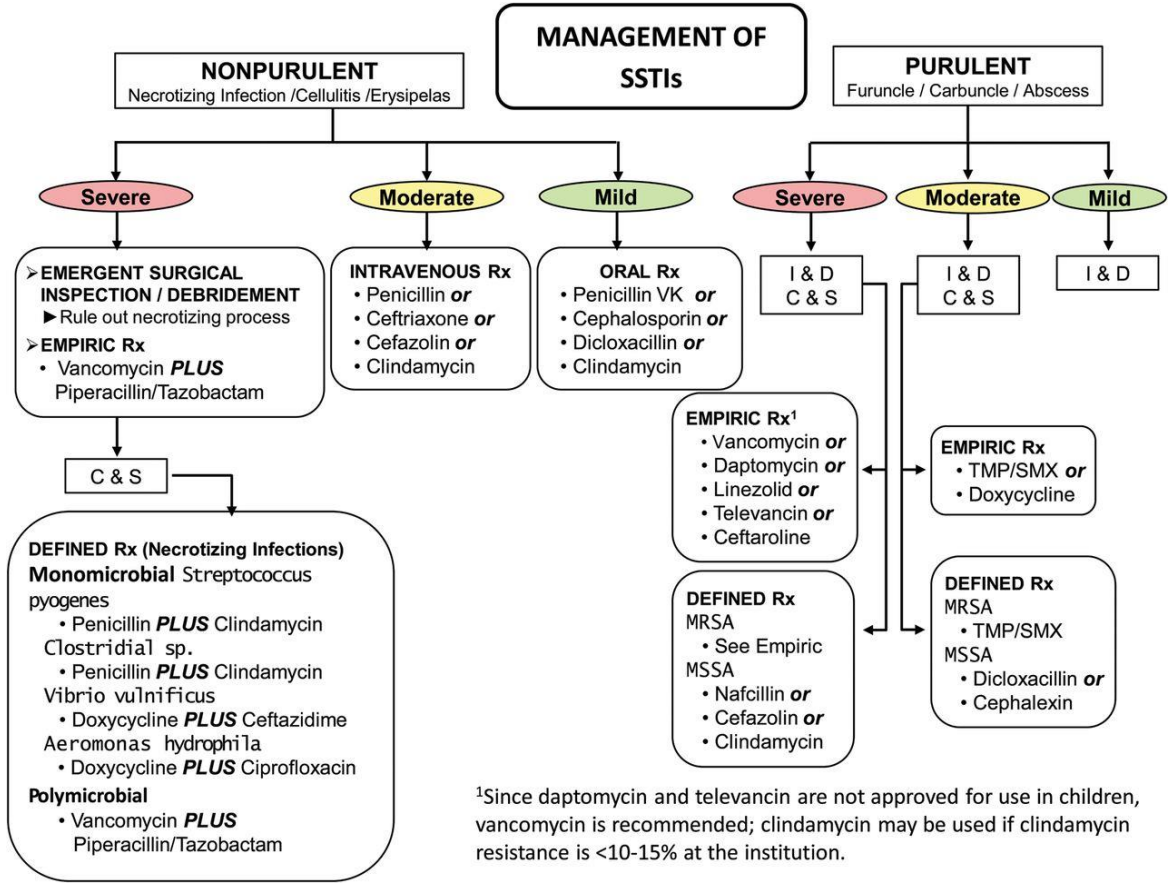


[1]Since daptomycin and televancin are not approved for use in children, vancomycin is recommended; clindamycin may be used if clindamycin resistance is <10-15% at the institution.

Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by the Infectious Diseases Society of America

Dennis L. Stevens,[1] Alan L. Bisno,[2] Henry F. Chambers,[3] E. Patchen Dellinger,[4] Ellie J. C. Goldstein,[5] Sherwood L. Gorbach,[6] Jan V. Hirschmann,[7] Sheldon L. Kaplan,[8] Jose G. Montoya,[9] and James C. Wade[10]

DE FORMA GENERAL…

- Incidencia: 200/100.000 pacientes/año.
- Más frecuentes en edad media o avanzada.
- Gérmenes Gram positivos (*Streptococcus spp. Staphylococcus spp).*
- Forma más grave: infección necrotizante.
- Criterios de gravedad de ERON
- Criterios de ingreso hospitalario:
  - Clasificación ERON 3 ó 4.
  - Imposibilidad de tratamiento vo.
  - Rápida progresión de los síntomas.
  - No mejoría tras tratamiento ambulatorio.
  - Proximidad de la infección con material protésico.
  - Inmunodepresión severa.
  - Problema grave de seguimiento.

Criterios de ERON

1.- Pacientes afebriles y con buena situación.
2.- Enfermos con fiebre, escasa repercusión sistémica y sin comorbilidades
3.- Toxicidad sistémica, comorbilidad y/o compromiso local de la extremidad.
4.- Sepsis, infecciones graves como fascitis necrotizante.

CELULITIS Y ERISIPELA

INFECCIÓN NECROTIZANTE

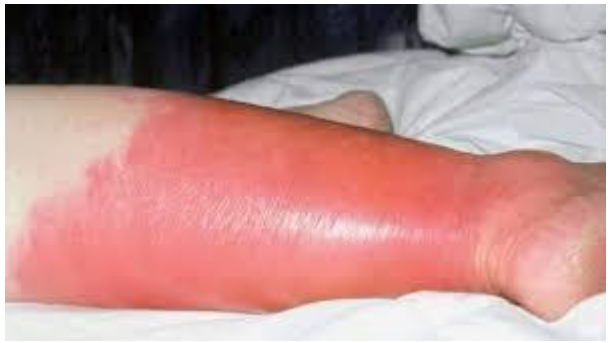
PIE DIABÉTICO INFECTADO

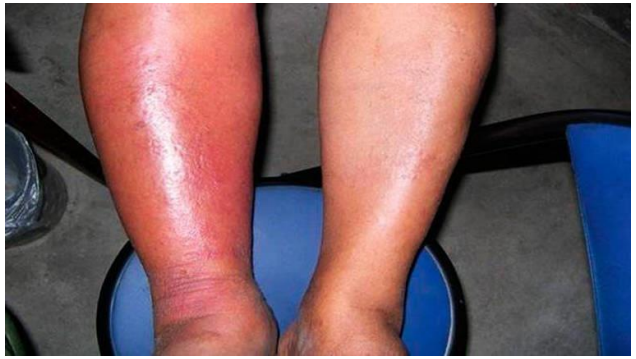
INFECCIÓN ÚLCERA POR PRESIÓN/SEPSIS

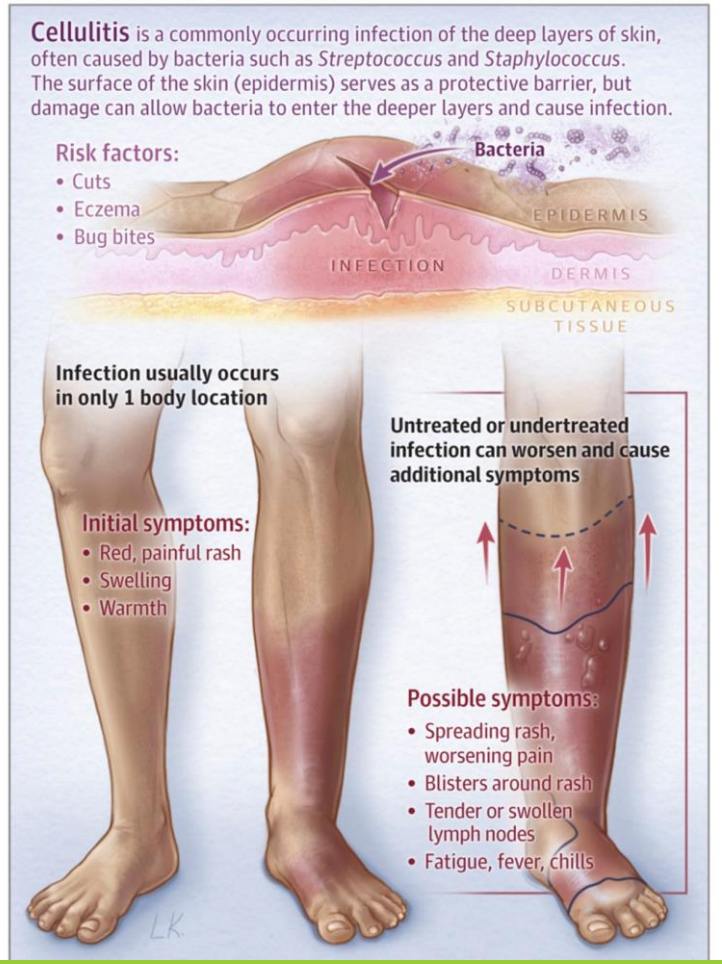
CELULITIS Y ERISIPELA

- *St. beta-hemolítico* (grupo A, B, C, G y F). Otros: *S. aureus*. Bacilos Gram negativos.

- Placa eritematosa, brillante, edematosa, bien delimitada en la erisipela, bordes no definidos en la celulitis. Asociada o no a linfangitis. Asociada o no a clínica sistémica.



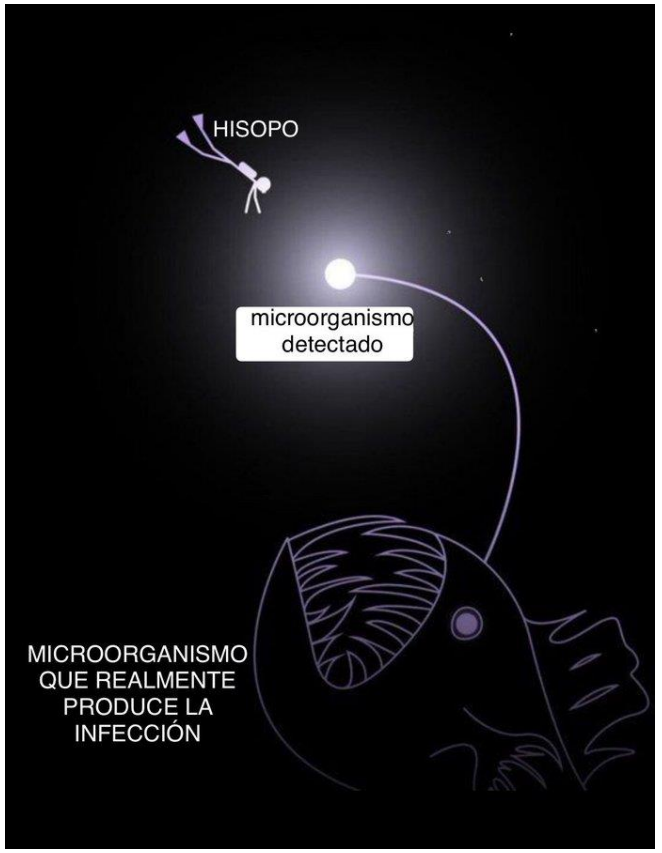




CELULITIS Y ERISIPELA

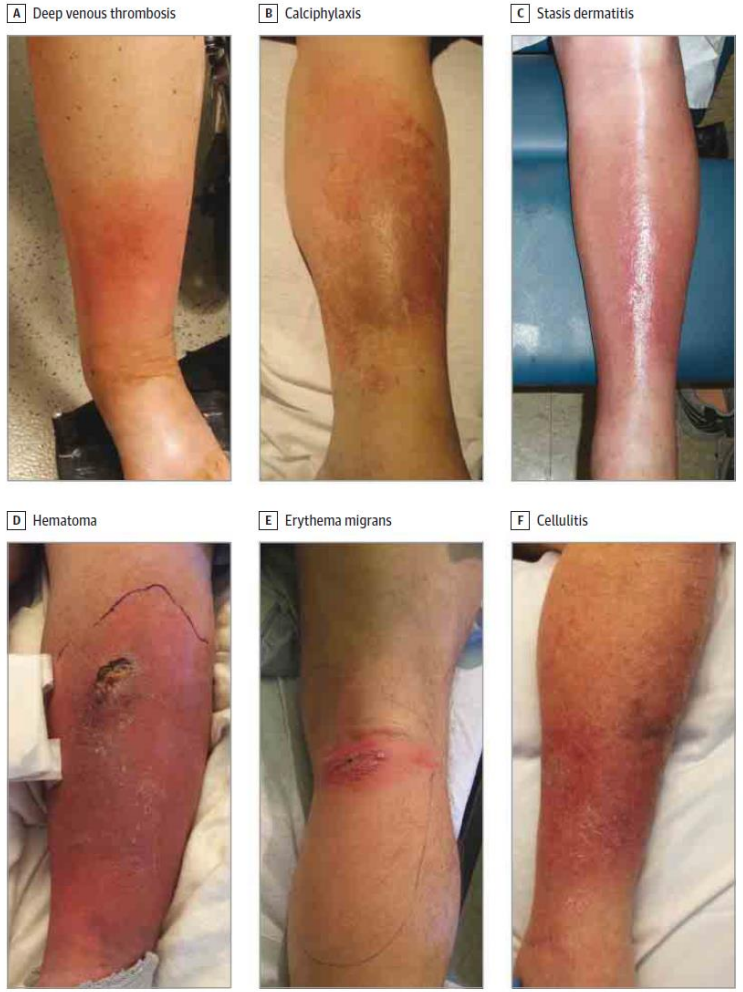
Evitar recogida de muestras con torunda

- Analítica general.
- En celulitis: cultivo punción o aspiración o biopsia (Portagerm ®), en absceso: drenaje quirúrgico y cultivo (Portagerm ®).
- Hemocultivos si : toxicidad sistémica, inmunodeprimidos o sospecha de multirresistencia.



CELULITIS: DIAGNOSTICO DIFERENCIAL

	Differential Diagnoses
Infectious	
Common	Erythema migrans, herpes simplex, herpes zoster, cutaneous abscess
Uncommon	Bacterial (eg, erysipeloid, necrotizing fasciitis); viral (eg, parvovirus B19, CMV); fungal (eg, *Cryptococcus neoformans*, *Sporothrix schenckii*, mucormycosis); mycobacterial; parasites (eg, *Trypanosoma cruzi*, *Dermatobia hominis* [myiasis]); osteomyelitis; septic joint
Inflammatory	
Common	Drug reactions; contact dermatitis; angioedema; Sweet syndrome; gout; acute bursitis; erythema nodosum
Uncommon	Fixed drug reaction; pyoderma gangrenosum; sarcoidosis; eosinophilic cellulitis (Well syndrome); relapsing polychondritis; familial Mediterranean fever; polyarteritis nodosa; panniculitis (eg, lipodermatosclerosis, morphea, eosinophilic fasciitis, traumatic, pancreatic, lupus); cutaneous GVHD
Vascular	
Common	Venous stasis dermatitis; lymphedema; deep vein thrombosis; superficial thrombophlebitis; hematoma
Uncommon	Erythromelalgia; calciphylaxis
Neoplastic	
Uncommon	Carcinoma erysipeloides; Paget disease of the breast; extramammary Paget disease; inflammatory breast carcinoma; lymphoma; leukemia
Miscellaneous	
Common	Insect bites/stings; reaction to foreign body implant (eg, metal, mesh, silicone or paraffin injections); postcutaneous injection; intravenous line infiltration
Uncommon	Compartment syndrome; radiation recall; pressure/coma bullae

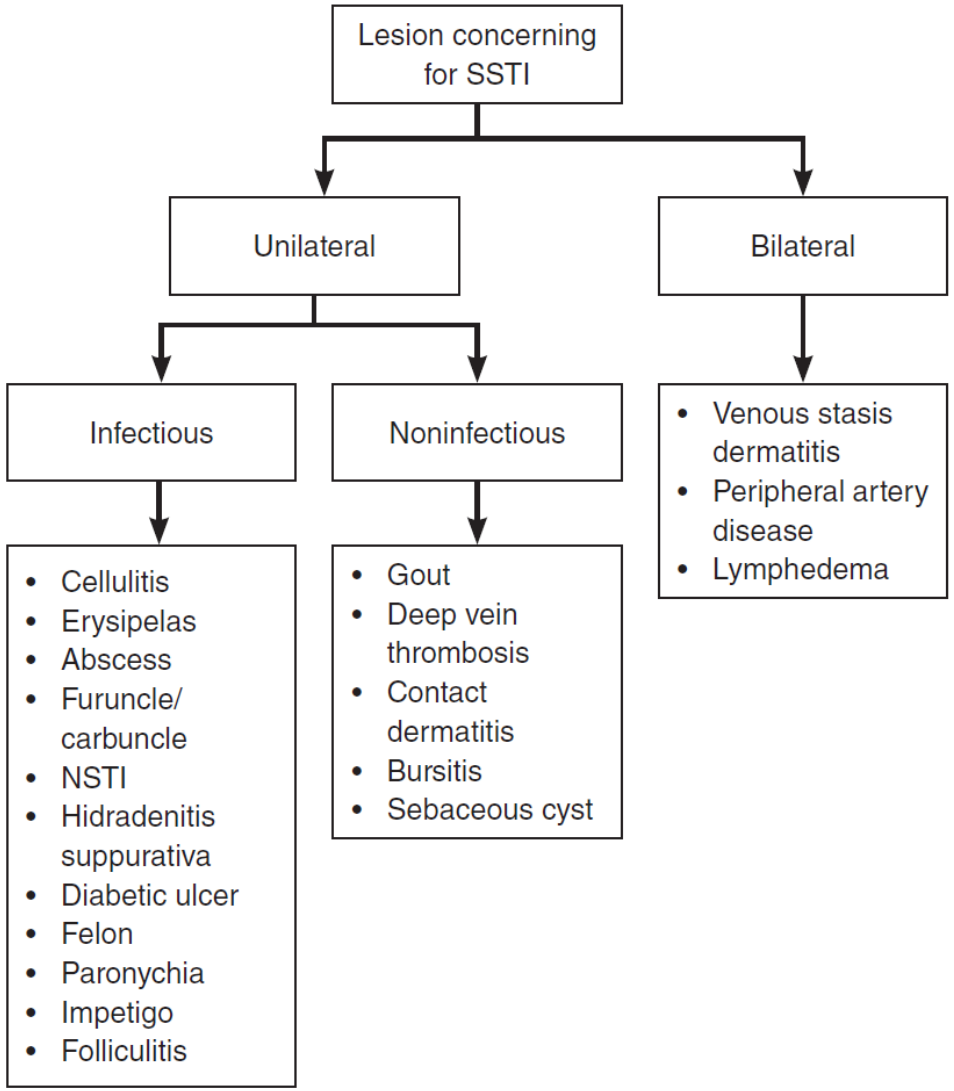


Review

Cellulitis
A Review

Adam B. Raff, MD, PhD; Daniela Kroshinsky, MD, MPH

DIAGNÓSTICO DIFERENCIAL



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Emergency Medicine Practice
Evidence-Based Education • Practical Application

CELULITIS Y ERISIPELA: Tratamiento

Tratamiento de elección	Tratamiento alternativo
Sin sospecha de SARM	*Sin sospecha de SARM*
Cefadroxilo vo 500 mg /8h. Cefazolina 1-2 gr iv /8h ó Ceftriaxona 2 gr iv /24 h + Cloxacilina 2 gr/6 h.	Clindamicina 300-600 mg /8 h vo ó Moxifloxacino 400 mg /24 h vo. Clindamicina 600 mg /8 h iv ó Vancomicina ó Linezolid 600 mg /12 h iv.
Riesgo de SARM	*Sospecha de Gra*
Cotrimoxazol 160/800 mg vo /12 h ó Linezolid 600 mg /12 h vo. Vancomicina iv ó Linezolid 600 mg iv /12 h ó Daptomicina 6-8 mg /kg /24 h iv.	Asc

Colonización previa
Centro socio-sanitario
Uso de quinolonas o cefalosporinas en los 3 meses previos
Inmigrantes con lesiones necróticas, abscesos o celulitis purulenta
Ingreso reciente
Hemodiálisis
VIH avanzado

CELULITIS Y ERISIPELA: Tratamiento

Tratamiento de elección	Tratamiento alternativo
Sin sospecha de SARM	*Sin sospecha de SARM*
Cefadroxilo vo 500 mg /8h. Cefazolina 1-2 gr iv /8h ó Ceftriaxona 2 gr iv /24 h + Cloxacilina 2 gr/6 h.	Clindamicina 300-600 mg /8 h vo ó Moxifloxacino 400 mg /24 h vo. Clindamicina 600 mg /8 h iv ó Vancomicina ó Linezolid 600 mg /12 h iv.
Riesgo de SARM	*Sospecha de Gram negativos*
Cotrimoxazol 160/800 mg vo /12 h ó Linezolid 600 mg /12 h vo. Vancomicina iv ó Linezolid 600 mg iv /12 h ó Daptomicina 6-8 mg /kg /24 h iv.	Asociar Levofloxacino 750 mg /24 h vo ó iv.

CELULITIS Y ERISIPELA: Tratamiento

Tratamiento de elección	Tratamiento alternativo
Situaciones de riesgo	*Situaciones de riesgo*
Toxicidad sistémica: tratar como una infección necrotizante. Crepitación y/o maloliente: sospechar y tratar como infección necrotizante Diabetes: tratar anaerobios y Gram negativos: Amoxicilina- Clavulánico 2 gr iv /8 h iv ó Piperacilina-Tazobactam 4/0.5 gr /8 h iv Inmunodeprimidos: tratar Gram negativos: Piperacilina-Tazobactam 4/0.5 gr /8 h iv	Diabetes: Levofloxacino 750 mg /24 h + Metronidazol 500 mg /8 h vo ó iv. Inmunodeprimidos: Levofloxacino 750 mg /24 h + Metronidazol 500 mg /8 h vo o iv.

CELULITIS RECURRENTE

Table 1. Local and systemic risk factors associated with recurrent cellulitis

Local risk factors	Systemic risk factors
• previous episode of cellulitis • anatomic sites (lower limbs) • chronic edema • ipsilateral dermatitis • dermatomycosis • peripheral vascular disease • venous insufficiency • deep vein thrombosis • trauma • previous surgery • chronic wounds and ulcers • presence of foreign bodies	• obesity • diabetes • cancer • homelessness • others (chronic kidney disease, chronic obstructive pulmonary disease, liver disease) • injection drug use

REVIEW

Current Opinion **Prevention and treatment of recurrent cellulitis**

Maddalena Peghin, Elena Graziano, Cristina Rovelli and Paolo Antonio Grossi

Table 2. International guidelines recommendation for antibiotic prophylaxis in RC

Guidelines	Year	When to start prophylaxis	Antibiotic	Duration of prophylaxis	Self-administered antibiotic for RC
Australasian Lymphology Association [34]	2015	After 2 or more attacks of cellulitis per year	• Penicillin V 500 mg OD or 250 mg BID • Double dose if the patient weighs > 100kg • Cephalexin (dosage not specified) • If allergic to penicillin: erythromycin 250 mg OD	• Dosage of penicillin V may be reduced to 250 mg daily after one year of successful prophylaxis and discontinued after two years without recurrence • Prophylaxis may need to be lifelong	• Dicloxacillin 500 mg QID • Cephalexin (dosage not specified) • If allergic to penicillin: Clindamycin 300 mg TID
British Lymphology Society & Lymphoedema Support Network [33]	2022	After 2 or more attacks of cellulitis per year	• Penicillin V 250 mg BID • if BMI ≥ 33: 500 mg BID • If allergic to penicillin: clarithromycin 250 mg OD • If allergic to penicillin and taking statins: doxycycline 100 mg OD	NA	• Flucloxacillin 500 mg – 1g QID • If allergic to penicillin: clarithromycin 500 mg BID • If allergic to penicillin and taking statins: doxycycline 100 mg BID
Infectious Diseases Society of America [18]	2014	After 3–4 episodes of cellulitis per year	• Oral Penicillin V 250–500 mg QID • Erythromycin BID ma nel testo e presente 250 QID per il trattamento • Intramuscular benzathine penicillin (2–4 MU every 4–6 weeks)	• 4–52 weeks (oral penicillin or erythromycin) • every 2–4 weeks (intramuscular benzathine penicillin) • As long as the predisposing factors persist	NA
Italian Society of Infectious and Tropical Diseases [35]	2017	After 3–4 episodes of cellulitis per year	• Oral Penicillin V (dosage not specified) • Erythromycin BID (dosage not specified) • Intramuscular benzathine penicillin (2–4 MU every 4–6 weeks)	• 4–52 weeks (oral penicillin or erythromycin) • every 2–4 weeks (intramuscular benzathine penicillin) • As long as the predisposing factors persist	NA
National Institute for Health and Care Excellence [17]	2019	After 2 separate episodes in the previous 12 months	• Penicillin V 250 mg BID • If allergic to penicillin erythromycin 250 mg BID	• Not specified. Prophylaxis should be reviewed every 6 months	NA

BID, twice a day; BMI, body mass index; NA, not available; OD, daily; QID, four times a day; RC, recurrent cellulitis; TID, three times a day.

CELULITIS RECURRENTE

Antibiotic prophylaxis is currently recommended by international guidelines after a minimum of 2–4 episodes of cellulitis per year, considering the importance of predisposing risk factors [17,18,33–35] (Table 2). A predictive score known as Cellulitis Recurrence Score (CRS) including chronic venous insufficiency (1 point), ipsilateral deep vein thrombosis (1 point), lymphedema (2 points) and peripheral vascular disease (3 points) may support interventions to prevent cellulitis to start prophylaxis, when CRS is > 2 [36]. The recommended duration of prophylaxis usually ranges 6–12 months [18,34,35]. Antibiotic prophylaxis is effective as long as it is used but its effect declines over time [1,5]. Hence, antibiotics may be prolonged if RC occurs on discontinuation or until predisposing risk factor is corrected

REVIEW

Current Opinion **Prevention and treatment of recurrent cellulitis**

Maddalena Peghin, Elena Graziano, Cristina Rovelli and Paolo Antonio Grossi

ABSCESO CUTÁNEO

Table 1. Empirical Oral Antibiotic Regimens Recommended by the Infectious Diseases Society of America for Selected Patients with a Presumed Methicillin-Resistant *Staphylococcus aureus* (MRSA) Abscess.*

Antibiotic	Dose	
	Adults	Children
Trimethoprim–sulfamethoxazole†	One or two double-strength doses (160 mg of trimethoprim and 800 mg of sulfamethoxazole) twice per day	4–6 mg of trimethoprim per kilogram of body weight per dose and 20–30 mg of sulfamethoxazole per kilogram per dose twice per day
Clindamycin‡	300–450 mg three times per day	10–13 mg per kilogram per dose three to four times per day, not to exceed 40 mg per kilogram per day
Doxycycline§	100 mg twice per day	For children older than 8 years of age: body weight ≤45 kg, 2 mg per kilogram per dose twice per day; >45 kg, adult dose
Minocycline	200 mg initially, followed by 100 mg every 12 hr	For children older than 8 years of age: 4 mg per kilogram initially, then 2 mg per kilogram (not to exceed adult dose) twice per day

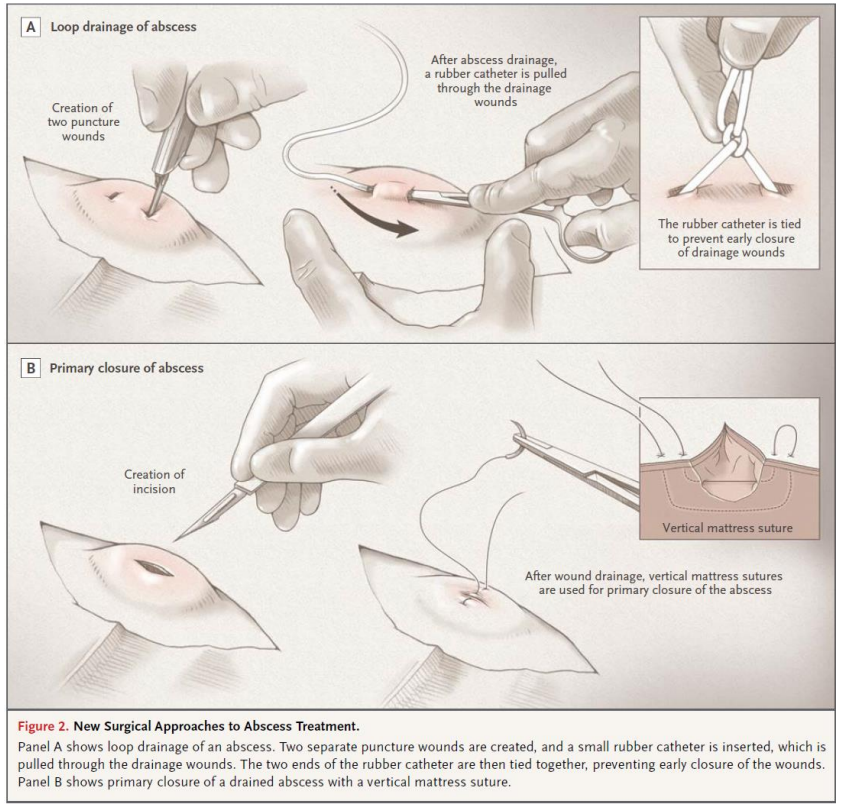


Figure 2. New Surgical Approaches to Abscess Treatment.
Panel A shows loop drainage of an abscess. Two separate puncture wounds are created, and a small rubber catheter is inserted, which is pulled through the drainage wounds. The two ends of the rubber catheter are then tied together, preventing early closure of the wounds. Panel B shows primary closure of a drained abscess with a vertical mattress suture.

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Edward W. Campion, M.D., *Editor*

Management of Skin Abscesses in the Era of Methicillin-Resistant *Staphylococcus aureus*

Adam J. Singer, M.D., and David A. Talan, M.D.

CELULITIS Y ERISIPELA

INFECCIÓN NECROTIZANTE

PIE DIABÉTICO INFECTADO

INFECCIÓN ÚLCERA POR PRESIÓN/SEPSIS

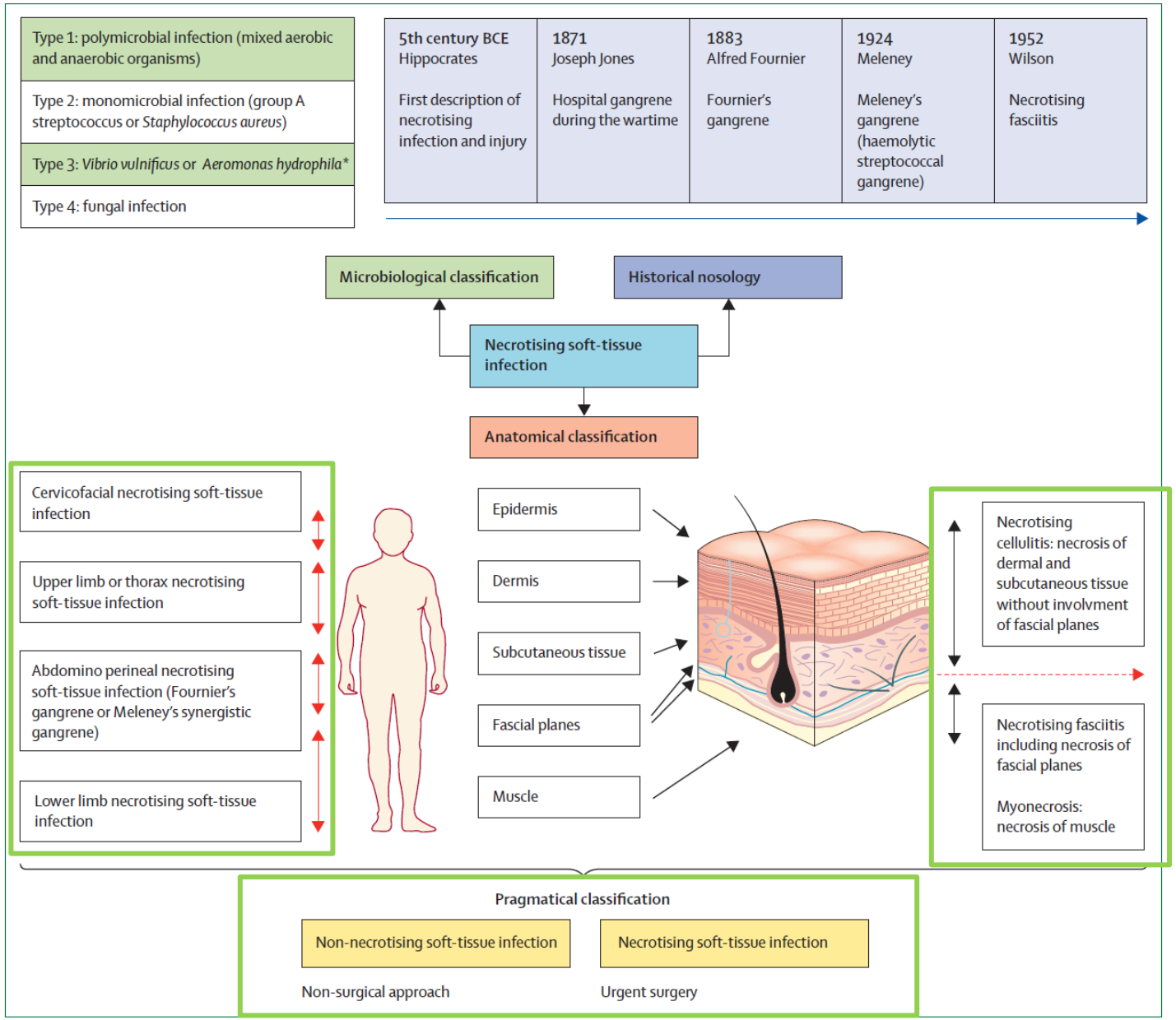


Figure 1: **A pragmatic approach of categorising necrotising soft-tissue infections**
Schema adapted from Prof Edouard Grosshans. *Not universally agreed on, some authors included clostridial infections or monomicrobial Gram-negative infections.

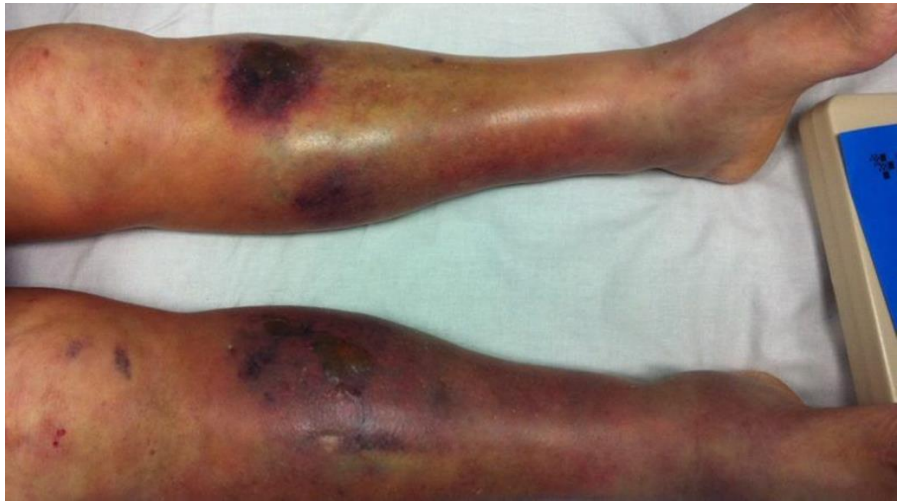
INFECCIÓN NECROTIZANTE

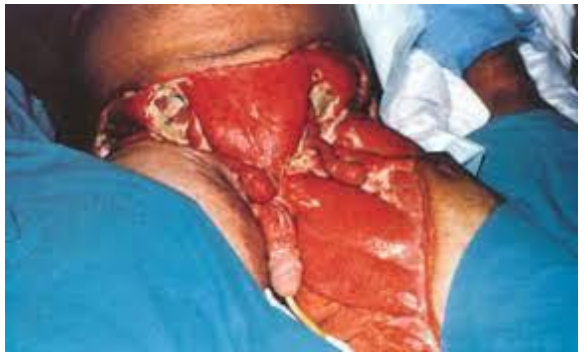
Dolor desproporcionado a la lesion observada, bullas violaceas, hemorragia cutánea, desprendimiento de piel, anestesia en la zona, gas en el tejido, rápida progresión.

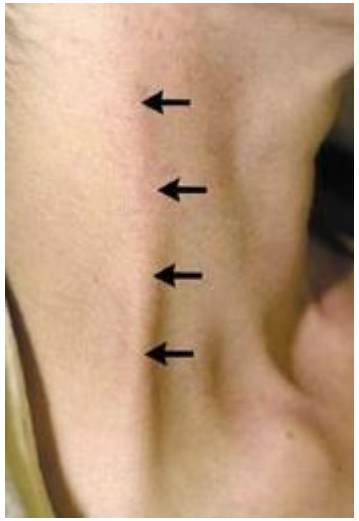
Gangrena de Fournier

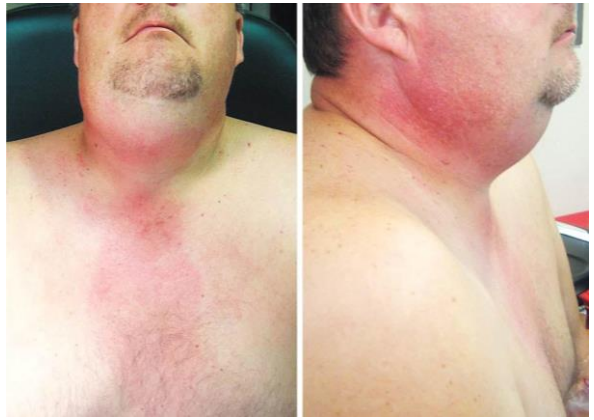
Síndrome de Lemierre

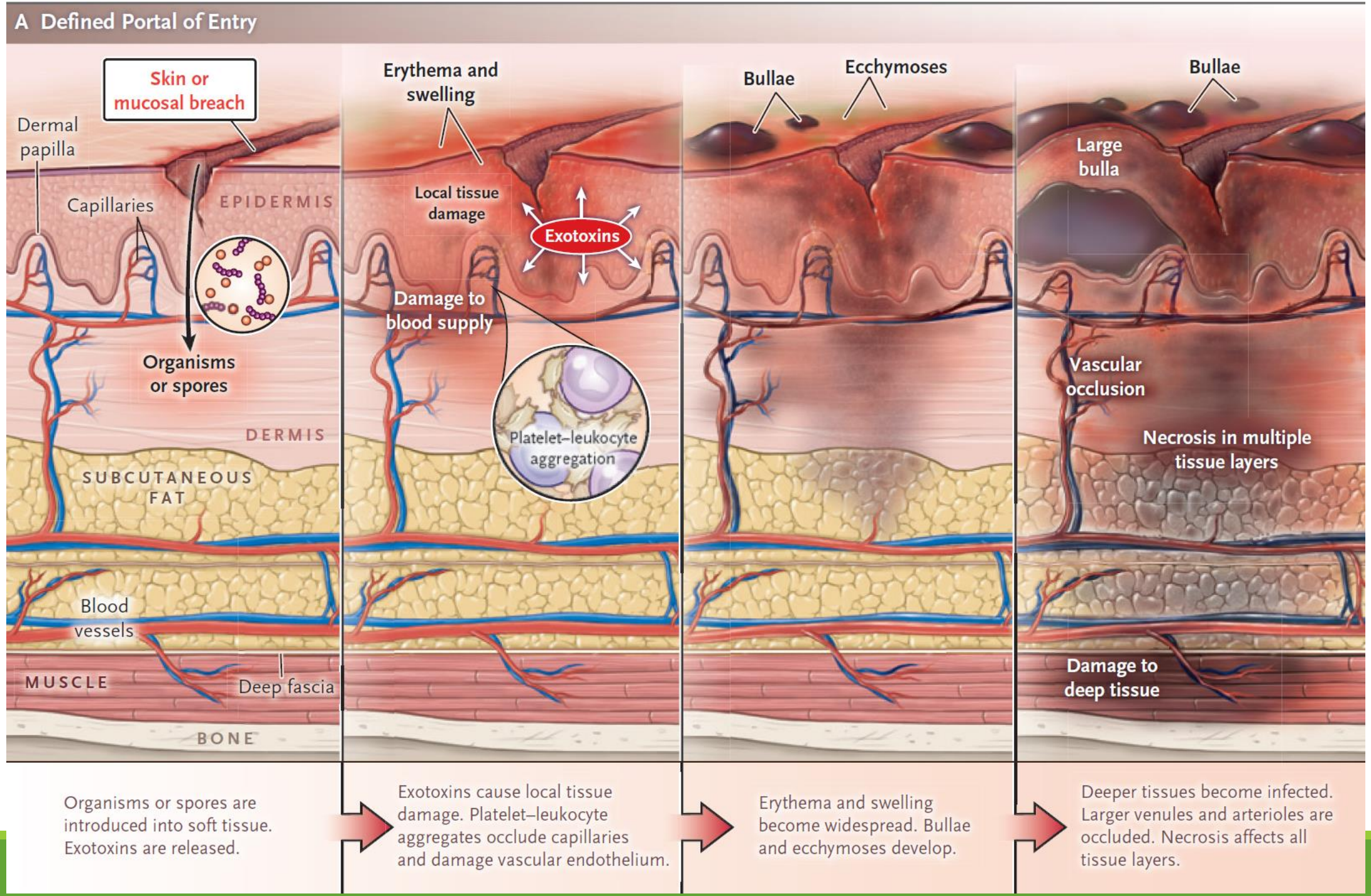
Angina de Ludwig

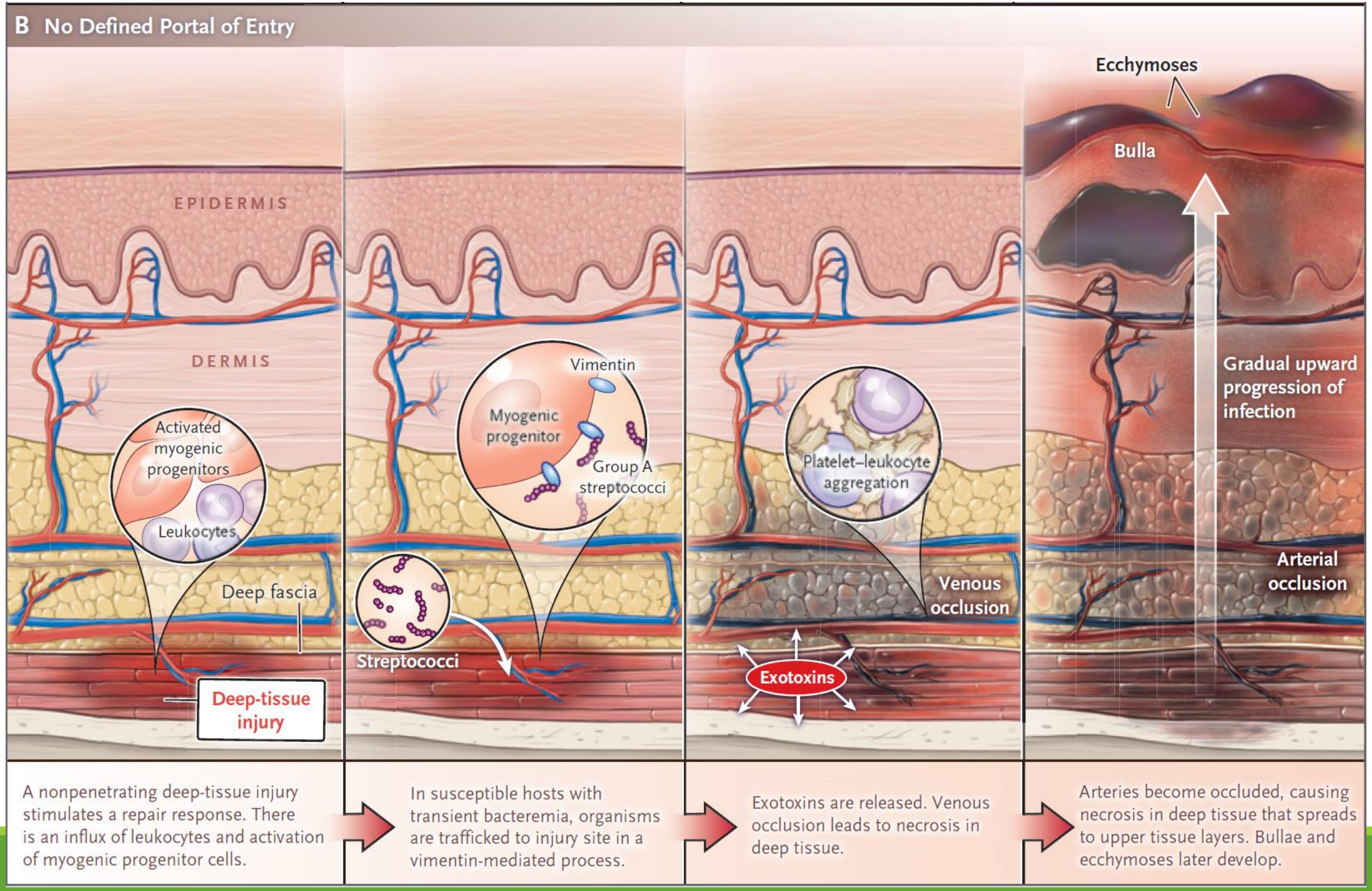









A Defined Portal of Entry
Skin or mucosal breach
Dermal papilla
Capillaries
EPIDERMIS
Organisms or spores
DERMIS
SUBCUTANEOUS FAT
Blood vessels
MUSCLE
Deep fascia
BONE
Erythema and swelling
Local tissue damage
Exotoxins
Damage to blood supply
Platelet–leukocyte aggregation
Bullae
Ecchymoses
Bullae
Large bulla
Vascular occlusion
Necrosis in multiple tissue layers
Damage to deep tissue
Organisms or spores are introduced into soft tissue. Exotoxins are released.
Exotoxins cause local tissue damage. Platelet–leukocyte aggregates occlude capillaries and damage vascular endothelium.
Erythema and swelling become widespread. Bullae and ecchymoses develop.
Deeper tissues become infected. Larger venules and arterioles are occluded. Necrosis affects all tissue layers.


B No Defined Portal of Entry
EPIDERMIS
DERMIS
Activated myogenic progenitors
Leukocytes
Deep fascia
Deep-tissue injury
Vimentin
Myogenic progenitor
Group A streptococci
Streptococci
Platelet–leukocyte aggregation
Venous occlusion
Exotoxins
Ecchymoses
Bulla
Gradual upward progression of infection
Arterial occlusion
A nonpenetrating deep-tissue injury stimulates a repair response. There is an influx of leukocytes and activation of myogenic progenitor cells.
In susceptible hosts with transient bacteremia, organisms are trafficked to injury site in a vimentin-mediated process.
Exotoxins are released. Venous occlusion leads to necrosis in deep tissue.
Arteries become occluded, causing necrosis in deep tissue that spreads to upper tissue layers. Bullae and ecchymoses later develop.

FASCITIS NECROTIZANTE

Table 1. Classification of NF

Type	Common Locations	Infectious Profile	Common Microorganisms	Vulnerable Populations	Important Nuances
Type I (most common)	Perineum, trunk, groin, abdominal wall	Polymicrobial	≥1 anaerobic (nontypable streptococci and Enterobacteriaceae) + aerobic (Gram + or Gram –)	Mostly immunocompromised Patients Newborns (a complication of omphalitis)	Chronic illnesses/immunosuppression (diabetes mellitus, peripheral vascular disease, chronic renal failure, HIV, chronic cardiac/pulmonary disease) Recreational drug use (I.V. drug misuse, alcohol abuse) trauma (blunt/penetrating trauma, surgery, burns) Nutritional issues (obesity, malnutrition)
Type II (less common)	Extremities, head & neck	Monomicrobial	β-hemolytic group-A streptococcus *Staphylococcus aureus* Other streptococci	Mostly immunocompetent individuals with a history of recent trauma/operation	Toxic shock syndrome (30% of cases)
Type III (uncom-mon)	Extremities, trunk, perineum	Monomicrobial	*Vibrio* species (*Vibrio vulnificus* *Vibrio damsela* *Vibrio parahaemolyticus*) *Clostridium* species Gram-negative bacteria *Aeromonas hydrophila*	*Vibrio*: following minor injuries exposed to salt water *Clostridium*: Injury/Surgical wounds, drug addicts *Aeromonas*: Seafood consumption	Fulminant course Multiorgan failure, if untreated
Type IV (very rare)	Extremities, trunk, perineum	Fungal	*Candida* species Zygomycetes	Mostly after trauma/burns in immunocompetent indi-viduals severely immuno-compromised individuals	Aggressive especially in immunocompromised

Practical Review of Necrotizing Fasciitis: Principles and Evidence-based Management

Gunel Guliyeva, MD
Maria T. Huayllani, MD
Nishant T. Sharma, MD
Jeffrey E. Janis, MD

Summary: Necrotizing fasciitis is a severe, life-threatening soft tissue infection that presents as a surgical emergency. It is characterized by a rapid progression of inflammation leading to extensive tissue necrosis and destruction. Nonetheless, the diagnosis might be missed or delayed due to variable and nonspecific clinical presentation, contributing to high mortality rates. Therefore, early diagnosis and prompt, aggressive medical and surgical treatment are paramount. In this review, we highlight the defining characteristics, pathophysiology, diagnostic modalities, current principles of treatment, and evolving management strategies of necrotizing fasciitis. (*Plast Reconstr Surg Glob Open 2024; 12:e5533; doi: 10.1097/GOX.0000000000005533; Published online 19 January 2024.*)

FASCITIS NECROTIZANTE

Sospecha:

- Leucocitosis > 20.000.
- Alteración función renal.
- Un estudio sugiere que PCR > 160 mg/L o CK > 600 UI/L deberían hacer iniciar el estudio de FN por S. pyogenes.

Practical Review of Necrotizing Fasciitis: Principles and Evidence-based Management

DIAGNÓSTICO

Diagnóstico microbiológico

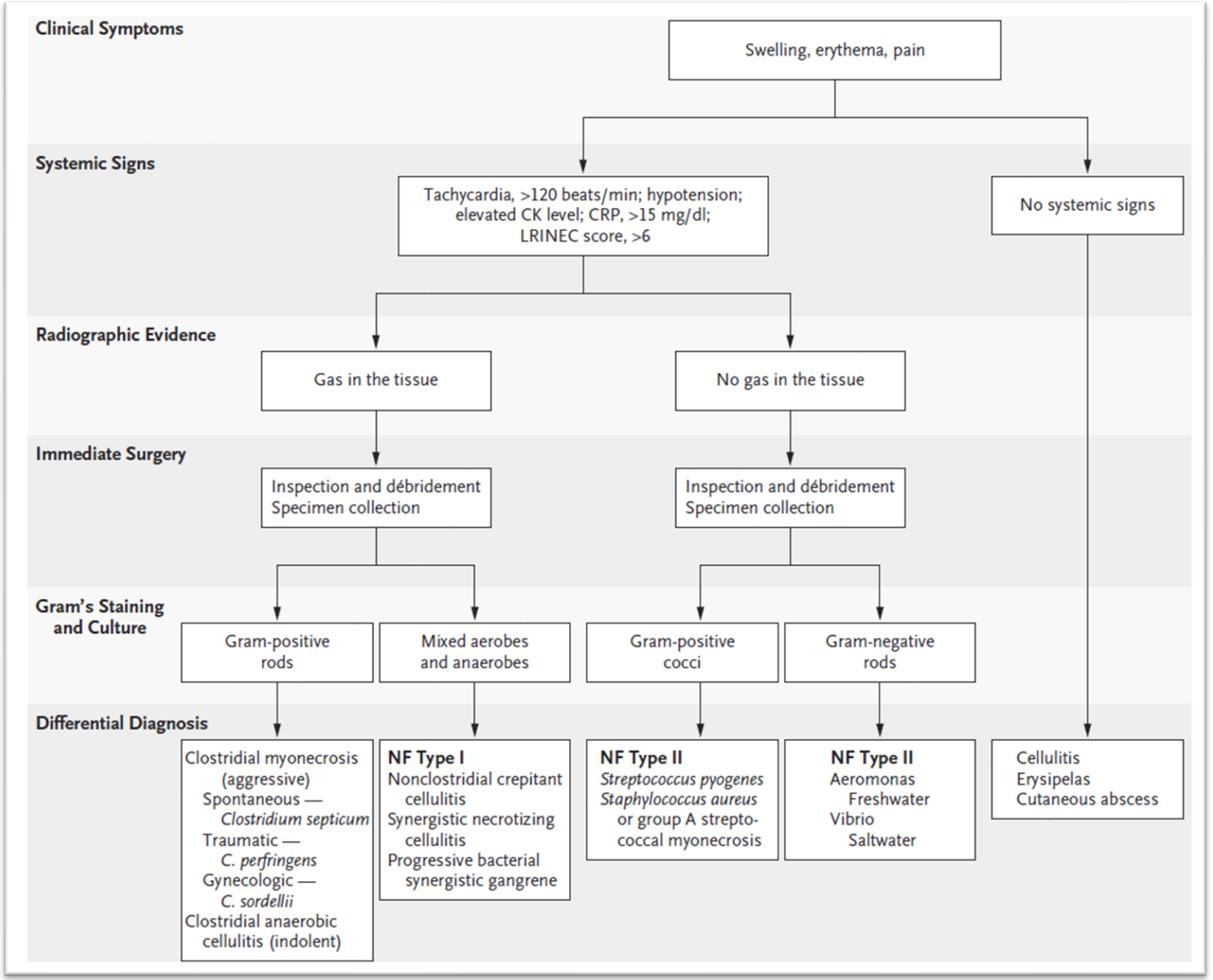
- Hemocultivos (+ en 11-60% de los casos).
- Biopsia intraoperatoria (+ en 80%).
- Aspiración con aguja fina de un área de necrosis (+ hasta 73%).
- Cultivos para hongos en pacientes inmunocomprometidos.

Laboratory Index	Summary of Included	Criteria
LRINEC	Six common serum para time of presentation	≥6 = higher risk of NF
MLRINEC	Six common serum para disease at the time of	≥12 = higher risk of NF
FGSI	Three vital signs + six se	9 = cut-off value for NF >9 = mortality likelihood of 75% ≤9 = survival likelihood of 78%
SIARI	Four comorbidities + th markers	3 = cut-off value for NF 6–7 = moderate risk of NF ≥8 = high risk for NF
LARINF	Three comorbidities + t markers	≥5 = higher risk of NF

VARIABLE	SCORE
Proteína C reactiva (mg/l)	
<150	0
150 o más	4
Leucocitos (per mm3)	
<15	0
15-25	1
>25	2
Hemoglobina (g/dl)	
>13,5	0
11-13,5	1
>11	2
Sodio (mmol/l)	
≥135 or more	0
<135	2
Creatinina (mg/dL)	
<1.6	0
≥1.6	2
Glucosa (mg/dL)	
menor o igual a 180	0
>180	1

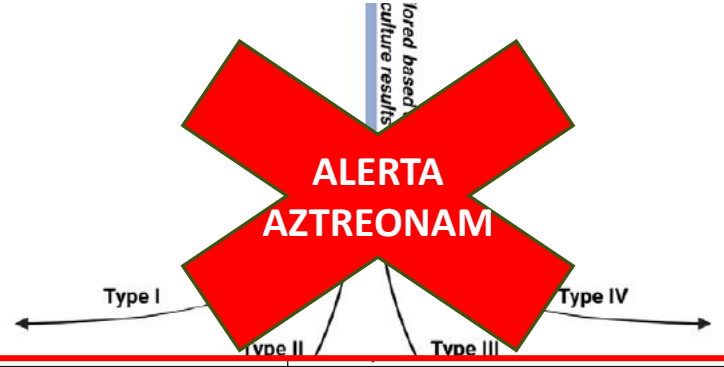
Wong et al. The LRINEC (Laboratory Risk Indicator for Necrotizing Fasciitis) score: a tool for distinguishing necrotizing fasciitis from other soft tissue infections. Crit Care Med (2004) vol. 32 (7) pp. 1535-41

Laboratory Index	Summary of Included Parameters	Parameters	Criteria
LRINEC	Six common serum parameters at the time of presentation	CRP total WBC count Hemoglobin serum Na Creatinine glucose	≥6 = higher risk of NF
MLRINEC	Six common serum parameters + liver disease at the time of presentation	CRP total WBC count Hemoglobin serum Na Creatinine glucose Lactate liver disease	≥12 = higher risk of NF
FGSI	Three vital signs + six serum markers	Temperature heart rate Respiration rate serum Na Serum K creatinine Hematocrit total WBC count Serum bicarbonate	9 = cut-off value for NF >9 = mortality likelihood of 75% ≤9 = survival likelihood of 78%
SIARI	Four comorbidities + three serum markers	Site of infection outside the lower limb History of immunosuppression Age ≤ 60 Creatinine Inflammatory markers (total WBC count CRP)	3 = cut-off value for NF 6–7 = moderate risk of NF ≥8 = high risk for NF
LARINF	Three comorbidities + three serum markers	Heart, liver, or renal insufficiency Immunosuppression (does not include diabetes) Obesity Procalcitonin CRP Hemoglobin	≥5 = higher risk of NF


Clinical Symptoms
Swelling, erythema, pain
Systemic Signs
Tachycardia, >120 beats/min; hypotension; elevated CK level; CRP, >15 mg/dl; LRINEC score, >6
No systemic signs
Radiographic Evidence
Gas in the tissue
No gas in the tissue
Immediate Surgery
Inspection and débridement Specimen collection
Inspection and débridement Specimen collection
Gram's Staining and Culture
Gram-positive rods
Mixed aerobes and anaerobes
Gram-positive cocci
Gram-negative rods
Differential Diagnosis
Clostridial myonecrosis (aggressive)
Spontaneous — Clostridium septicum
Traumatic — C. perfringens
Gynecologic — C. sordellii
Clostridial anaerobic cellulitis (indolent)
NF Type I
Nonclostridial crepitant cellulitis
Synergistic necrotizing cellulitis
Progressive bacterial synergistic gangrene
NF Type II
Streptococcus pyogenes
Staphylococcus aureus
or group A strepto-coccal myonecrosis
NF Type II
Aeromonas
Freshwater
Vibrio
Saltwater
Cellulitis
Erysipelas
Cutaneous abscess

Nonsurgical Therapy for the Management of Necrotizing Fasciitis

Choose 1	PLUS	Choose 1	PLUS	Give
• Vancomycin IV 15-20 mg/kg q6hr • Linezolid IV 600 mg bid		• Piperacillin-tazobactam IV 3.375 g q6hr • Meropenem IV 1g q8hr • Imipenem IV 1g q8hr		• Clindamycin IV 600-800 mg q8hr



Fascitis necrosante	
S. pyogenes, *S. aureus*, enterobacterales, *Pseudomonas aeruginosa* Anaerobios	Clindamicina 600 mg/8h + ciprofloxacino 400 mg /8h Tigeciclina 100 mg seguido de 50 mg /12h + ciprofloxacino Si sepsis: añadir amikacina 15 mg/kg/24h

CURRENT OPINION

Emerging treatment options for skin and soft tissue infections tailoring drug selection to individual patients

Nadia Castaldo[a], Antonio Vena[b,c], Alessandro Limongelli[b,c], Daniele Roberto Giacobbe[b,c] and Matteo Bassetti[b,c]

Practical Review of Necrotizing Fasciitis: Principles and Evidence-based Management

Gunel Guliyeva, MD
Maria T. Huayllani, MD
Nishant T. Sharma, MD
Jeffrey E. Janis, MD

Summary: Necrotizing fasciitis is a severe, life-threatening soft tissue infection that presents as a surgical emergency. It is characterized by a rapid progression of inflammation leading to extensive tissue necrosis and destruction. Nonetheless, the diagnosis might be missed or delayed due to variable and nonspecific clinical presentation, contributing to high mortality rates. Therefore, early diagnosis and prompt, aggressive medical and surgical treatment are paramount. In this review, we highlight the defining characteristics, pathophysiology, diagnostic modalities, current principles of treatment, and evolving management strategies of necrotizing fasciitis. *(Plast Reconstr Surg Glob Open 2024; 12:e5533; doi: 10.1097/GOX.0000000000005533; Published online 19 January 2024.)*

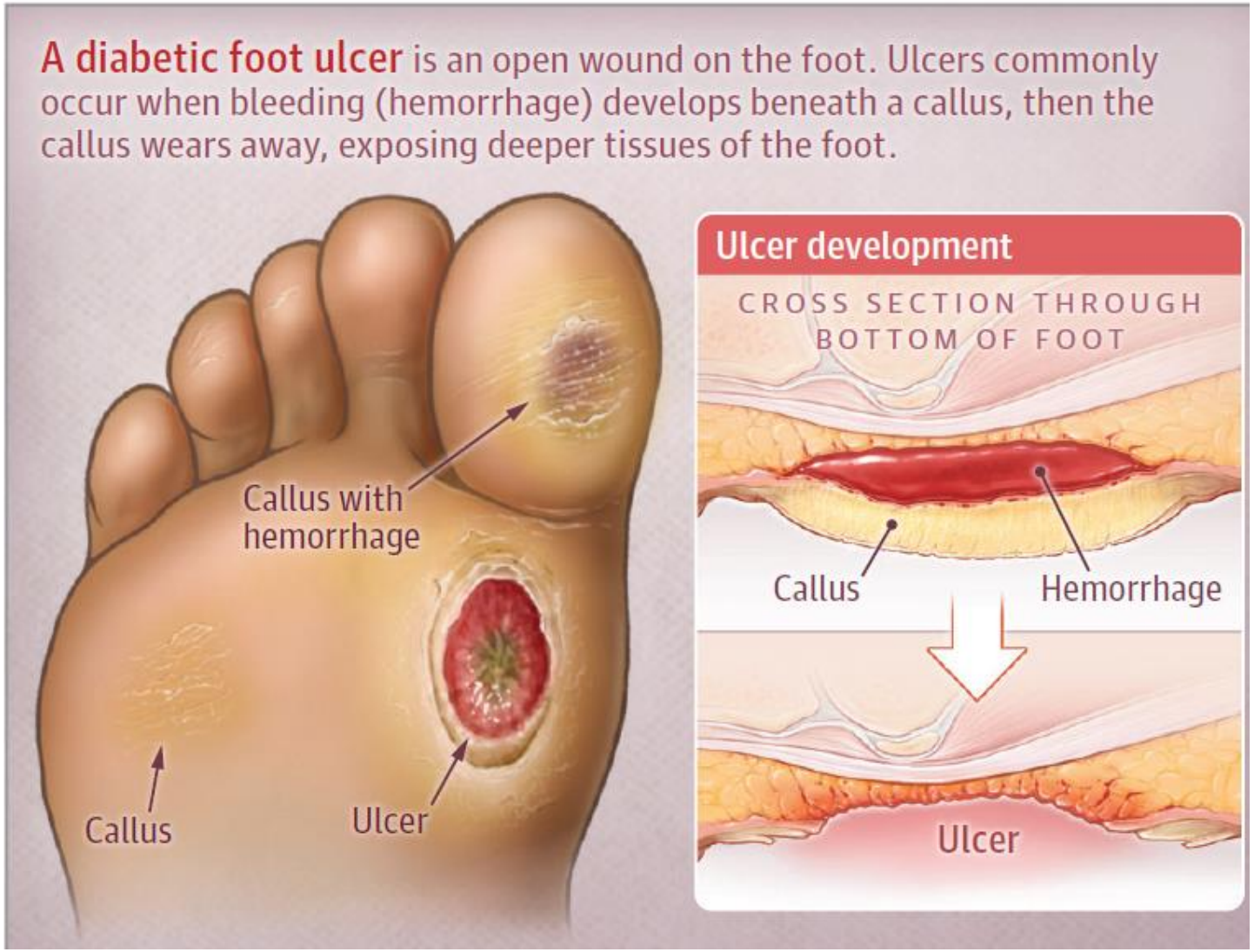
CELULITIS Y ERISIPELA

INFECCIÓN NECROTIZANTE

PIE DIABÉTICO INFECTADO

INFECCIÓN ÚLCERA POR PRESIÓN/SEPSIS

What Are Diabetic Foot Ulcers?



PIE DIABÉTICO INFECTADO

Secreción purulenta
Eritema
Dolor
Calor
Edema
Induración

Sin criterios de gravedad o leve: Dos o más manifestaciones de inflamación pero con celulitis < 2 cm alrededor de la úlcera, infección limitada a piel superficial o tejido subcutáneo sin otras complicaciones locales o sistémicas.

Con criterios de gravedad ó moderado/grave:

- Moderada: Dos o más manifestaciones de inflamación asociada al menos a uno de los siguientes: celulitis > 2 cm alrededor de la úlcera, linfangitis, propagación por debajo de la aponeurosis superficial, abscesos en tejidos profundos, gangrena y afectación del músculo, tendón, articulación, o hueso.
- Grave: Infección moderada asociada a inestabilidad hemodinámica o metabólica.

PIE DIABÉTICO INFECTADO

S. aureus.

Enterobacterias.

Anaerobios.

PIE DIABÉTICO INFECTADO

Realización de pruebas en infecciones moderadas o graves, o presencia de pus franco.

Gram y cultivo para aerobios/anaerobios por aspiración (transporte en Portagerm ®) o curetaje de la base de la úlcera.

En infección moderada/grave solicitar: hemograma, PCR, perfil bioquímico básico, perfil hepático y renal, HbA1c, y gasometría venosa.

Descartar osteomielitis.

Si osteomielitis: estudio anatomo-patológico y cultivo óseo.

Desbridamiento quirúrgico (recogida de muestras).

Estudio vascular.

The Wound, Ischemia, and Foot Infection (WIfI) classification system consists of 3 components graded separately from 0 (none) to 3 (severe).

One component may be dominant but the specific combination of scores is used to estimate the risk of limb amputation at 1 year and the need for or benefit of revascularization.[a]

Wound (W)

Grade	Ulcer	Gangrene
0	None	None
1	Small, shallow	None
2	Deep with exposed bone, joint, or tendon	Limited to digits
3	Extensive, deep, and involving forefoot and/or midfoot with or without calcaneal involvement	Extensive and involving forefoot and/or midfoot Full thickness heel necrosis with or without calcaneal involvement

Ischemia (I)

Grade	Ankle-brachial index Ankle systolic pressure	Toe pressure or transcutaneous oximetry
0	≥0.80 >100 mm Hg	≥60 mm Hg
1	0.60-0.79 70-100 mm Hg	40-59 mm Hg
2	0.40-0.59 50-69 mm Hg	30-39 mm Hg
3	≤0.39 <50 mm Hg	<30 mm Hg

Foot infection (fI)

Grade	Clinical manifestation
0	No symptoms or signs of infection
1	Infection indicated by ≥2 of the following: • Local swelling or induration • Erythema 0.5-2.0 cm around ulcer • Local tenderness or pain • Local warmth • Purulent discharge (thick, opaque to white, or sanguineous)
2	Infection as described above with: • Erythema >2 cm around ulcer • Involving structures deeper than skin and subcutaneous tissues (eg, abscess, osteomyelitis, septic arthritis, fasciitis) • No signs of systemic inflammatory response (see below)
3	Infection as described above with ≥2 signs of systemic inflammatory response syndrome: • Temperature >38 °C or <36 °C • Heart rate >90/min • Respiratory rate >20/min or $Paco_2$ <32 mm Hg • White blood cell count >12 000/μL or <4000/μL or 10% immature forms

INFECCIÓN LEVE: de elección	INFECCIÓN LEVE: alternativa
Amoxicilina-clavulánico 875/125 mg /8 h vo ± levofloxacino 500 mg /24 h vo. Si sospecha de SARM : valorar añadir cotrimoxazol 800/160 mg /8 h vo.	Clindamicina 300 mg /6 h vo + levofloxacino 500 mg /24 h vo
INFECCIÓN MODERADA-GRAVE: de elección	**INFECCIÓN MODERADA-GRAVE: alternativa**
Piperacilina-Tazobactam 4/0.5 g /8h iv ó Meropenem 1 gr /8 h	Aztreonam 1-2 gr /8h + Clindamicina 600 mg /6-8 h
Sospecha de SARM: Añadir Vancomicina 1 gr/12 h ó Linezolid 600 mg /12 h o Daptomicina 6-8 mg /kg /24 h.	
Sospecha de BLEE: Añadir Tigeciclina 100 mg iv en dosis de carga seguido de 50 mg /12 ho iv.	
Si toxicidad sistémica, cubrir Pseudomonas	

INFECCIÓN LEVE: de elección	INFECCIÓN LEVE: alternativa
Amoxicilina-clavulánico 875/125 mg /8 h vo ± levofloxacino 500 mg /24 h vo. Si sospecha de SARM : valorar añadir cotrimoxazol 800/160 mg /8 h vo.	Clindamicina 300 mg /6 h vo + levofloxacino 500 mg /24 h vo
INFECCIÓN MODERADA-GRAVE: de elección	**INFECCIÓN MODERADA-GRAVE: alternativa**
Piperacilina-Tazobactam 4/0.5 g /8h iv ó Meropenem 1 gr /8 h	Aztreonam 1-2 gr /8h + Clindamicina 600 mg /6-8 h
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Si toxicidad sistémica, cubrir Pseudomonas	

Ulceras crónicas.
Exudativas con humedad
Antibióticos en el mes previo.

INFECCIÓN LEVE: de elección	INFECCIÓN LEVE: alternativa
Amoxicilina-clavulánico 875/125 mg /8 h vo ± levofloxacino 500 mg /24 h vo. Si sospecha de SARM : valorar añadir cotrimoxazol 800/160 mg /8 h vo.	Clindamicina 300 mg /6 h vo + levofloxacino 500 mg /24 h vo
INFECCIÓN MODERADA-GRAVE: de elección	**INFECCIÓN MODERADA-GRAVE: alternativa**
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Sospecha de BLEE: Añadir Tigeciclina 100 mg iv en dosis de carga seguido de 50 mg /12 ho iv.	
Si toxicidad sistémica, cubrir Pseudomonas	

Celulitis o pie diabético complicado	
S. pyogenes, *S. aureus*, enterobacterales, *Pseudomonas aeruginosa*	Levofloxacino 750 mg/24h IV Si sepsis: Vancomicina 30-40 mg/Kg/día en 2-3 dosis IV + amikacina 15 mg/kg/24h

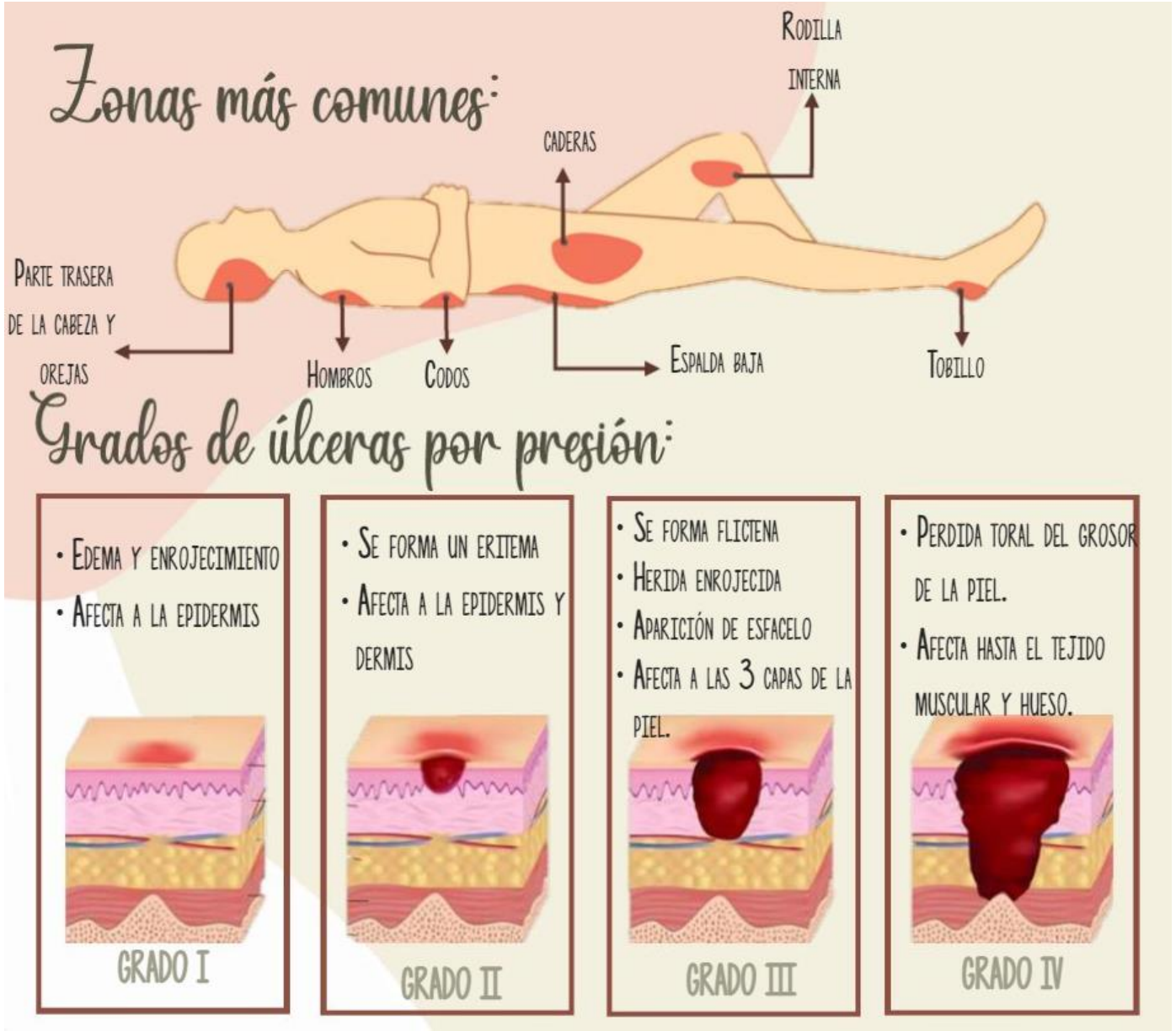
CELULITIS Y ERISIPELA

INFECCIÓN NECROTIZANTE

PIE DIABÉTICO INFECTADO

INFECCIÓN ÚLCERA POR PRESIÓN

INFECCIÓN DE ÚLCERAS POR PRESIÓN



INFECCIÓN DE ÚLCERAS POR PRESIÓN

Etiología polimicrobiana

- Desaconsejado el cultivo con torunda excepto tras retirar escara.

- Cultivar aspirado profundo con Portagerm ®.

Tratamiento de elección	Tratamiento alternativo
Drenaje/curetaje quirúrgico. Sin datos de sepsis: esperar a Gram/cultivos. Con datos de sepsis: iniciar antibiótico: Piperacilina/Tazobactam 4 gr /8h iv (primera dosis en 30 min, siguientes en 4 horas) + Vancomicina 15-20 mg /kg /8-12 h ó Linezolid 600 mg /12 h vo o iv.	Drenaje/curetaje quirúrgico. Sin datos de sepsis: esperar a Gram/cultivos. En caso de sepsis: Aztreonam 1-2 gr /8 h + Vancomicina 15-20 mg /kg /8-12 h iv

Celulitis o pie diabético complicado	
S. pyogenes, *S. aureus*, enterobacterales, *Pseudomonas aeruginosa*	Levofloxacino 750 mg/24h IV Si sepsis: Vancomicina 30-40 mg/Kg/día en 2-3 dosis IV + amikacina 15 mg/kg/24h

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