Neoplastic Wounds

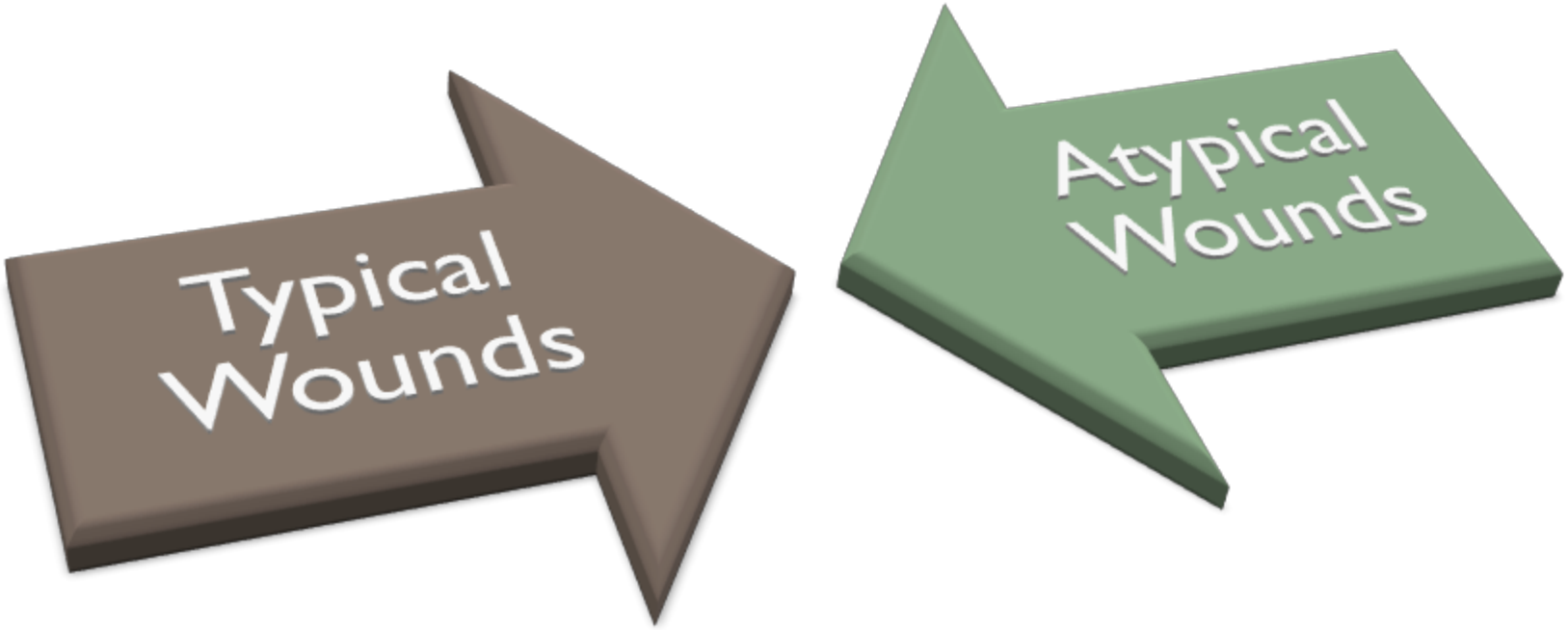
Valentina Dini MD, PhD

Wound Healing Research Unit

Department of Dermatology

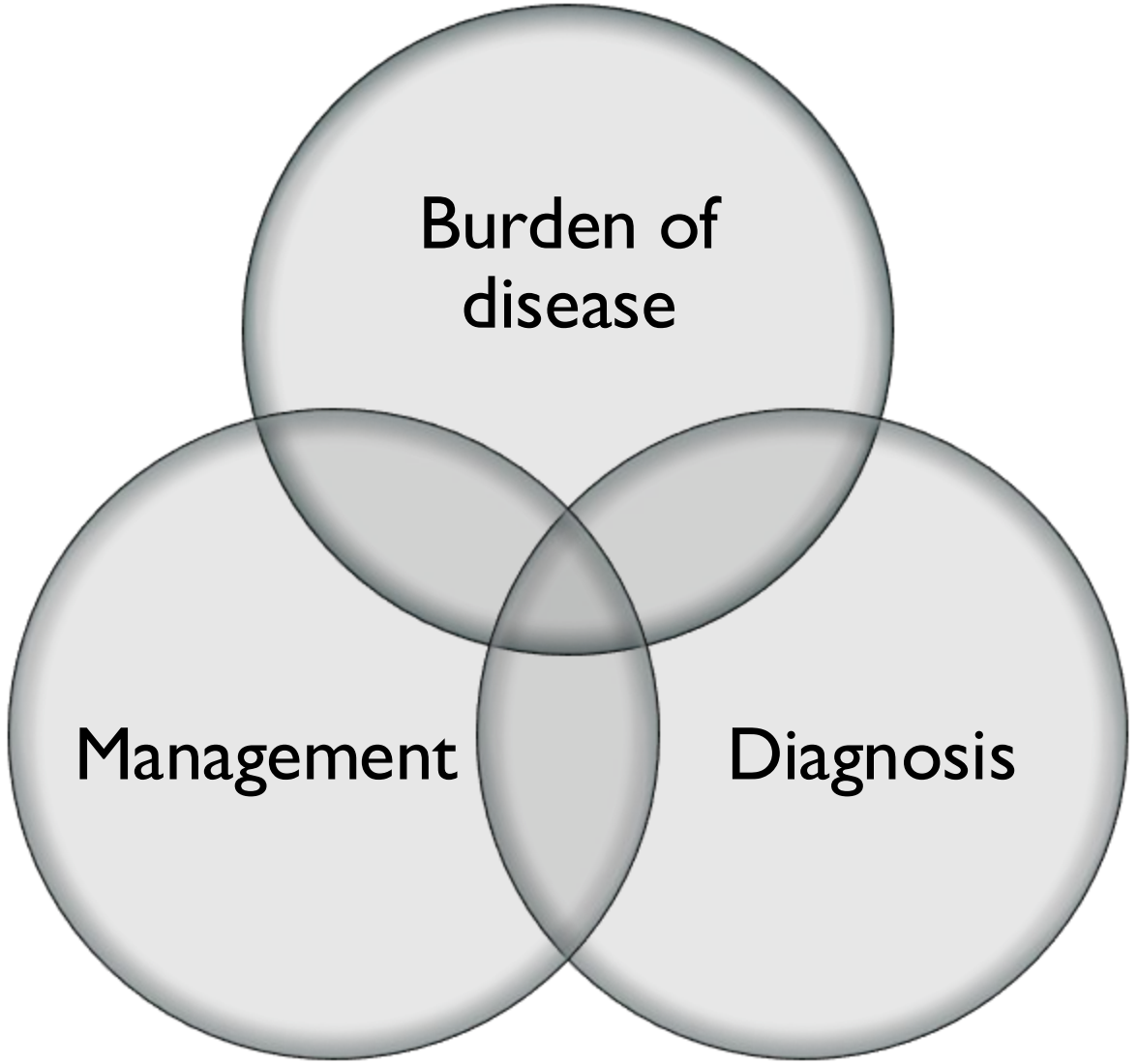
University of Pisa

Chronic Wounds



NEOPLASTIC WOUNDS

Neoplastic Wounds



Oncological wounds: introduction

Malignant wounds are a **burden disease** for the patients

Social damage

- Feeling of being unacceptable
- Social isolation
- Job insecurity

Physical damage

- Unpleasant odor
- Large quantities of discharge
- Induced or spontaneous bleeding
- Pain
- Risk of infection and hemorrhage

Psychological damage

- Impact on self-confidence
- dissolution of his/her body integrity
- Depression/Anxiety
- Feelings of worthlessness, guilt and shame
- Impact on quality of life

.Lo, S.F., *et al*.Experiences of living with a malignant fungating wound: a qualitative study. *J Clin Nurs,* 2008. 17(20): p. 2699-708.
Young CV. The effects of malodorous fungating malignant wounds on body image and quality of life. *J Wound Care*. 2005 ;14(8):359-62

Neoplastic Wounds: Clinical Aspects

- Atypical Aspects (Wound Bed, Edges)
- Atypical Location
- No subjective Symptoms
- Solitary or Multiple lesions
- Infiltration to underliyng and adjacent tissue
- Irregular Surrounding Skin
- Satellite lesions
- Resistant to standard treatment

Trent JT, Kirsner RS.Wounds and malignancy.Adv Skin Wound Care.2003.Jan-Feb;16(1):31-4.

Neoplastic Wounds: Atypical Aspects

Wound Bed:

- Exophytic growth
- Foamy Aspects
- Excess granulation tissue
- Pseudoephitelium
- Excess bleeding

Wound edges:

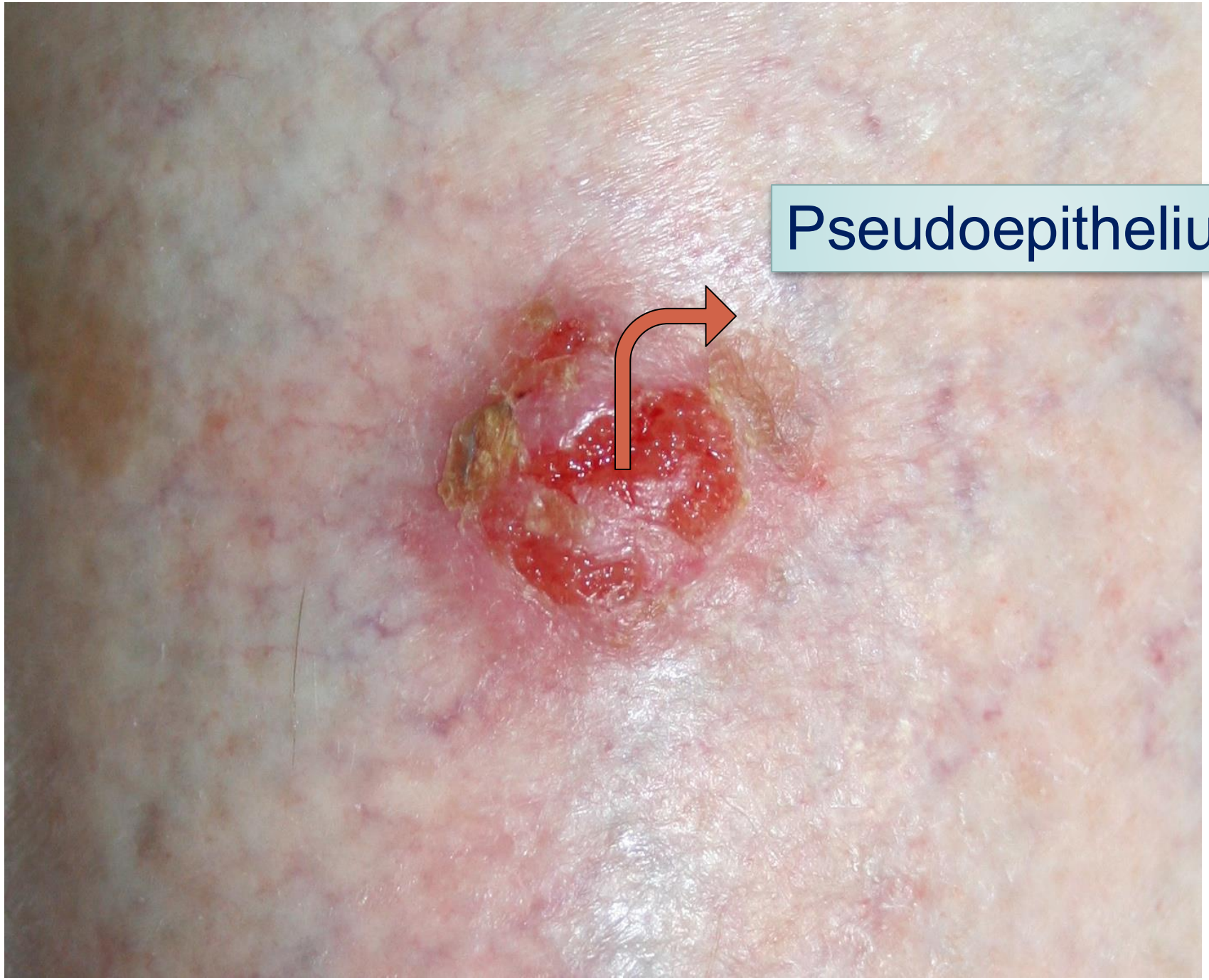
- Irregular
- Undermined
- Hypertrophic

Exophytic Growth

Basal Cell Carcinoma

Squamo Cell Carcinoma

Squamo Cell Carcinoma


Pseudoepithelium

Foamy Aspect

Basal Cell Carcinoma

Satellite Lesions

Cutaneous Lymphoma

Atypical Location

Typical Location but…..

Squamous Cell Carcinoma

After Cemiplimab

Infiltration of adjacent tissue

Irregular Surrounding Skin

Porocarcinoma

Wounds and Malignancy

- Wounds that degenerate into malignancy
- Malignancies that present as wounds, including cutaneous metastases
- Wounds with etiologies associated with malignancies
- Wounds resulting from treatment of malignancies

Trent JT, Kirsner RS.Wounds and malignancy.Adv Skin Wound Care.2003.Jan-Feb;16(1):31-4.

Senet P. Malignancy and chronic leg ulcers: the value of systematic wound biopsies: a prospective, multicenter, cross-sectional study. Arch Dermatol.2012 Jun;148(6):704-8.

Table 1. Characteristics of the 154 CLUs in This Study

Characteristic	Skin Cancer		OR (95% CI)	*P* Value[a]
	Absent	Present		
CLUs, No.	138	16	NA	NA
Area, mean (SD), cm^2	88.7 (104.4)	99 (195)	NA	.29
Duration, mean (SD), mo	72.2 (84.9)	67.4 (59.5)	NA	.86
Relapsing disease, No. (%)	45 (32.6)	5 (31.3)	1.06 (0.34-3.3)	.92
Located on sun-exposed areas, No. (%)	77 (55.8)	9 (56.3)	1.00 (1.00-1.00)	.65
Venous origin, No. (%)	115 (83.3)	12 (75.0)	NA	NA
Abnormal granulation tissue, No. (%)				
At the wound edge	48 (34.8)	15 (93.8)	25.05 (3.51-178.67)	.001
In the wound bed	34 (24.6)	13 (81.3)	12.76 (3.51-46.350)	<.001
Abnormal bleeding, No. (%)	13 (9.4)	4 (25.0)	3.22 (0.89-11.57)	.07
Abnormal pain, No. (%)	37 (26.8)	5 (31.3)	1.23 (0.42-3.57)	.71
High clinical suspicion, No. (%)				
CLU transformation	12 (8.7)	9 (56.3)	14.44 (4.31-48.31)	<.001
Ulcerated skin cancer	5 (3.6)	6 (37.5)	16.4 (4.18-64.3)	<.001
No. of biopsies per wound, mean (SD)	2.6 (1)	2.1 (0.9)	0.2 (0.1-0.6)	.01

Table 2. Sensitivity, Specificity, and Positive (PPV) and Negative (NPV) Predictive Values

Variable	OR (95% CI)			
	Sensitivity	Specificity	PPV	NPV
High clinical suspicion of				
CLU transformation	59.5 (31.8-82.3)	91.2 (85.1-95.0)	42.0 (21.7-65.4)	95.4 (90.1-98.0)
Ulcerated skin cancer	37.8 (16.7-64.9)	96.4 (91.4-98.5)	54.6 (25.3-81.0)	93.3 (87.6-96.5)
Abnormal granulation tissue				
At the wound edge	93.9 (64.9-99.2)	64.9 (55.9-72.9)	23.5 (14.1-36.4)	98.9 (92.3-99.9)
In the wound bed	81.3 (53.3-94.3)	75.9 (67.4-82.8)	27.3 (15.6-43.4)	97.2 (91.5-99.1)
Abnormal bleeding	25.0 (9.0-53.0)	90.5 (84.2-94.5)	23.4 (8.7-49.6)	91.5 (85.2-95.3)

Wounds that degenerate into malignancy

- **Chronic Inflammation with repeated damage and repair:**
  - Chronic Wounds (SCC)
  - Trauma
  - Infection (Osteomyelitis)

- **Induction of dormant neoplastic cell**

- **Toxins released from damaged tissue**

- **Genetics mutation: Hladr4, P53, Fas**

Challa Vr et al.Retrospective study of Marjolin's ulcers over an eleven year period.J Cutan Aesthet Surg. Jul. 7.155-9.

Wounds that degenerate into malignancy

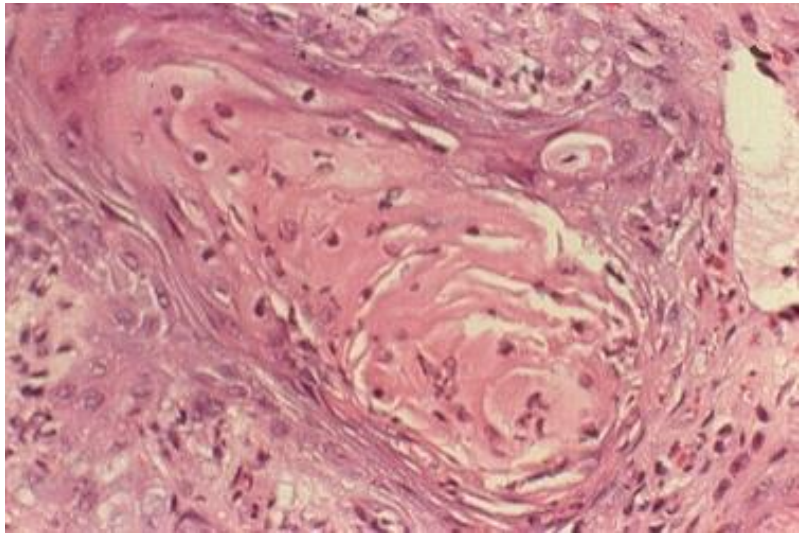
VLU degenerated in SCC

Osteomyelitis and SCC

33% of Osteomyelitis

↓

SCC



Burn Scar that degenerate into malignancy

Melanoma

SCC

1)Cantwell P, Brooks A Multiple melanoma in a burns scar. MJ Case Rep. 2018 22;11(1).
2)Das K et Al. Incidences of malignancy in chronic burn scar ulcers: experience from Bangladesh. Burns

Wounds and Malignancy

- Wounds that degenerate into malignancy
- Malignancies that present as wounds, including cutaneous metastases
- Wounds with etiologies associated with malignancies
- Wounds resulting from treatment of malignancies

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Suspected malignancy

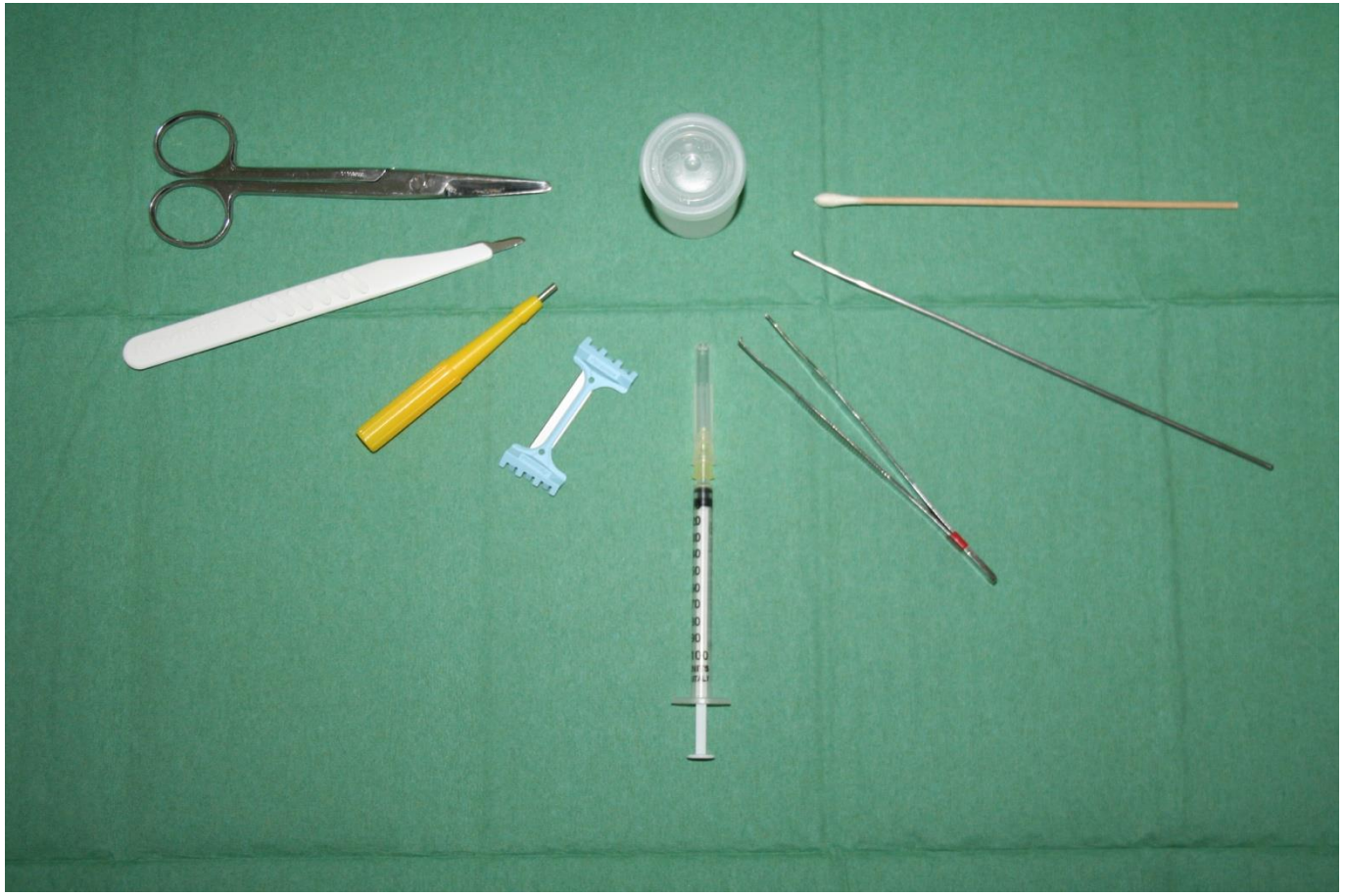
- When granulation tissue extends beyond the ulcer margin
- When specific characteristic features are observed, such as the typical pearly border of a basal cell carcinoma (BCC)
- When an ulcer arises within a prominent, heavily infiltrated nodule or tumor (e.g. melanoma or lymphoma)

Biopsy

Should be considered in:

- An ulcer in which the clinical diagnosis is not established
- A non-healing ulcer
- Suspected malignancy
- Wound bed and wound edge → Histopathology
  → Microbiology

Biopsy



Panuncialman J,Hammerman S, Carson P, Falanga V
Wound edge biopsy sites in chronic wounds heal rapidly and do not result in delayed overall healing of the wounds
Wound Repair Regen 2010; 18(1):21-25

PRIMARY NEOPLASTIC WOUNDS

- Squamous cell carcinoma
- Basal cell carcinoma
- Melanoma
- Kaposi’ s Sarcoma
- Cutaneous Lymphoma
- Other

Perrotto J, Glick B: Lower extremity malignancies masquerading as ulcers Ostomy Wound Manage. 2006 Oct;52(10):46-52

Basal Cell Carcinoma (BCC)

Squamo Cell Carcinoma (SCC)

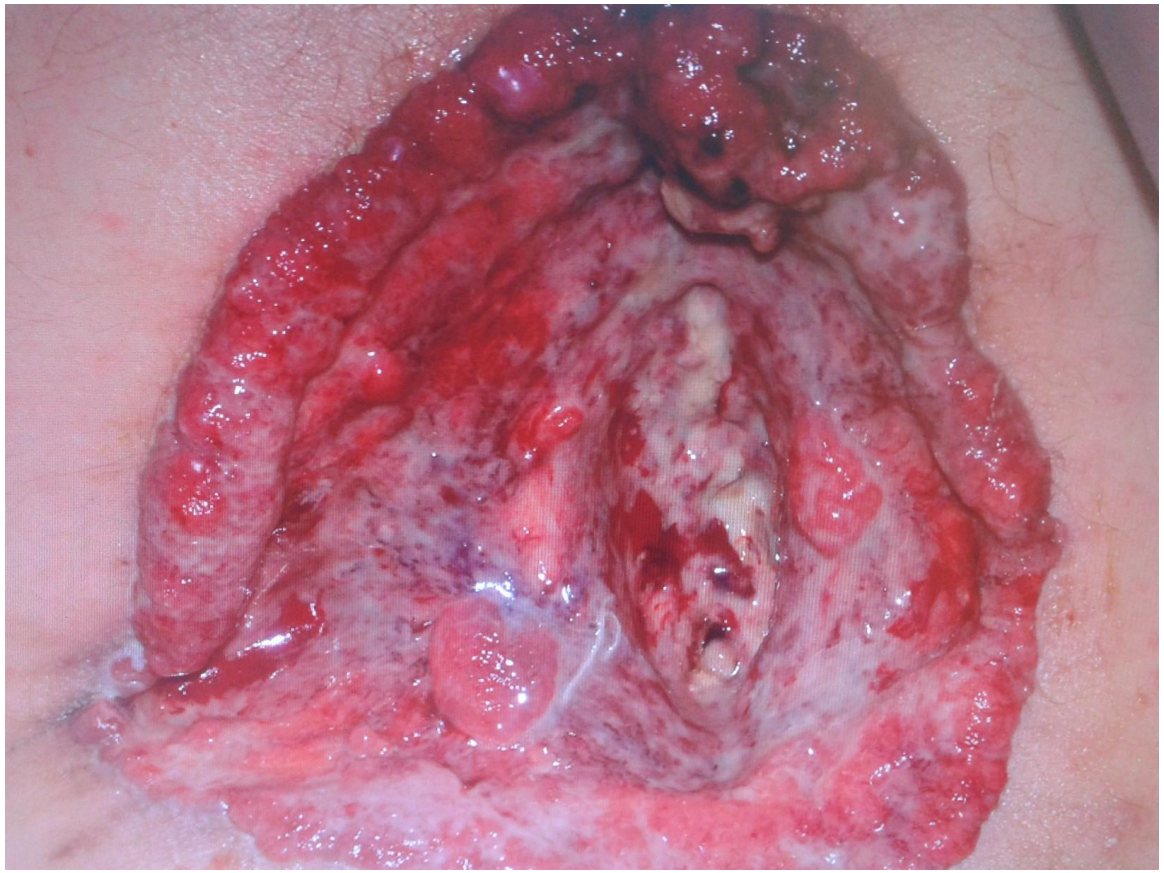
Squamo Cell Carcinoma (SCC)

SCC: Clinical Aspects

BASAL CELL CARCINOMA (BCC)

Alexander G.Basal cell carcinoma: Pathogenesis, epidemiology, clinical features,diagnosis, histopathology and management.Yale J Biol Med.2015 Jun: 88(2):167-179.

BASAL CELL CARCINOMA (BCC)



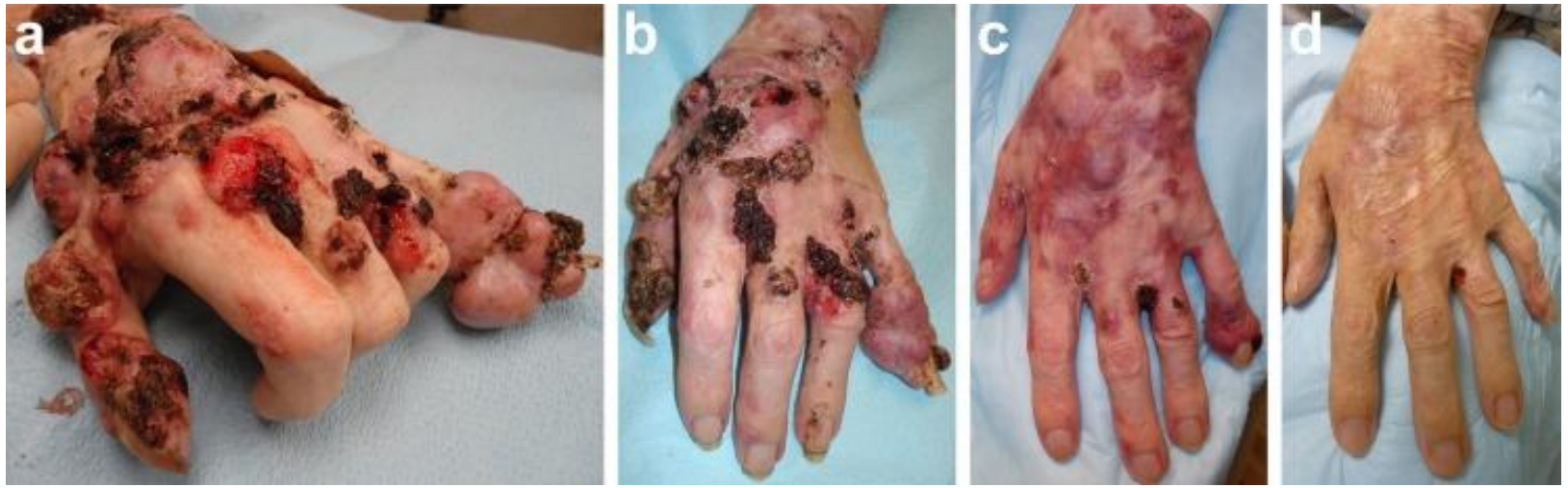
Ulcerated BCC

Autologous Skin Graft

Targeted therapies: basal cell carcinoma

VISMODEGIB is an oral inhibitor of the hedgehog signaling pathway

- 150 mg /day
- For locally advanced and metastatic basal cell carcinoma

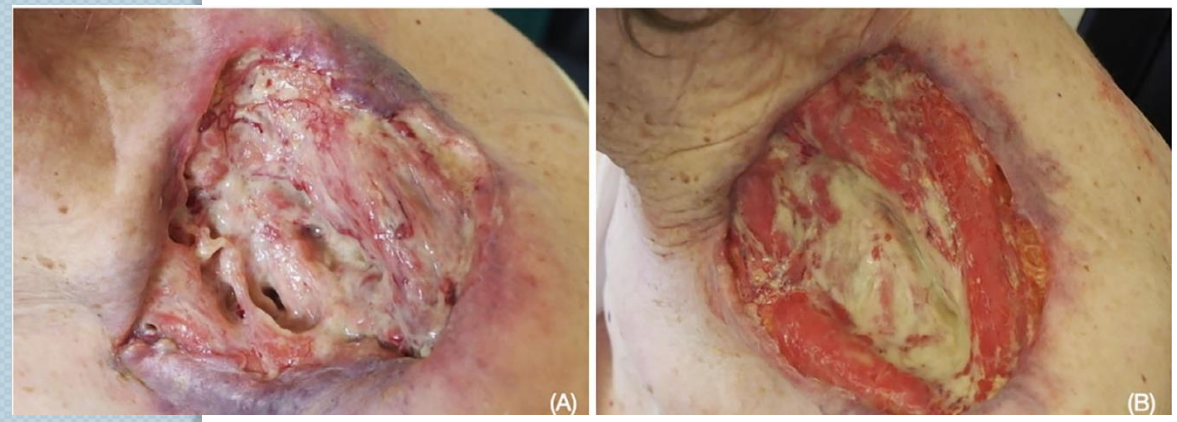


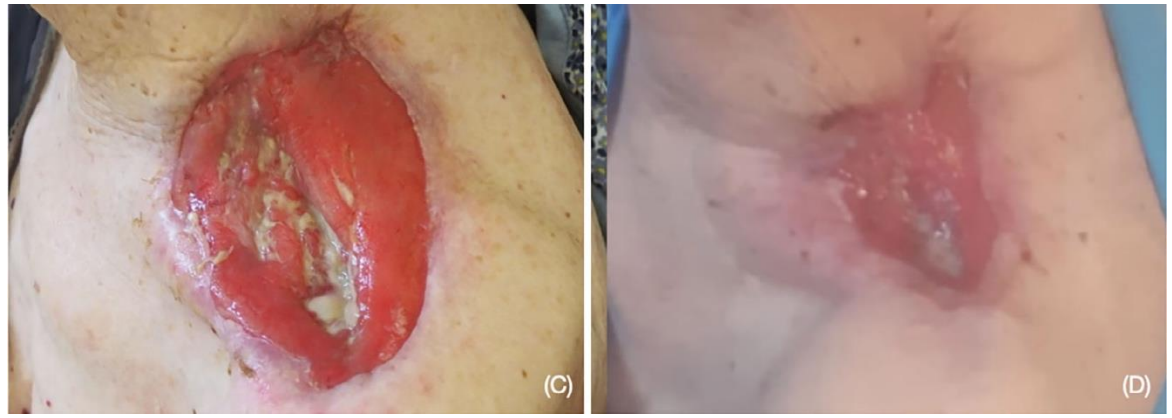
Zhu G. et al Oral smoothened inhibitor for advanced basal cell carcinoma of the hand: a case report.Hand 2014.9(1),127-128.

Targeted therapies: basal cell carcinoma

SONIDEGIB is an oral inhibitor of the hedgehog signaling pathway

- 200 mg /day
- For locally advanced basal cell carcinoma



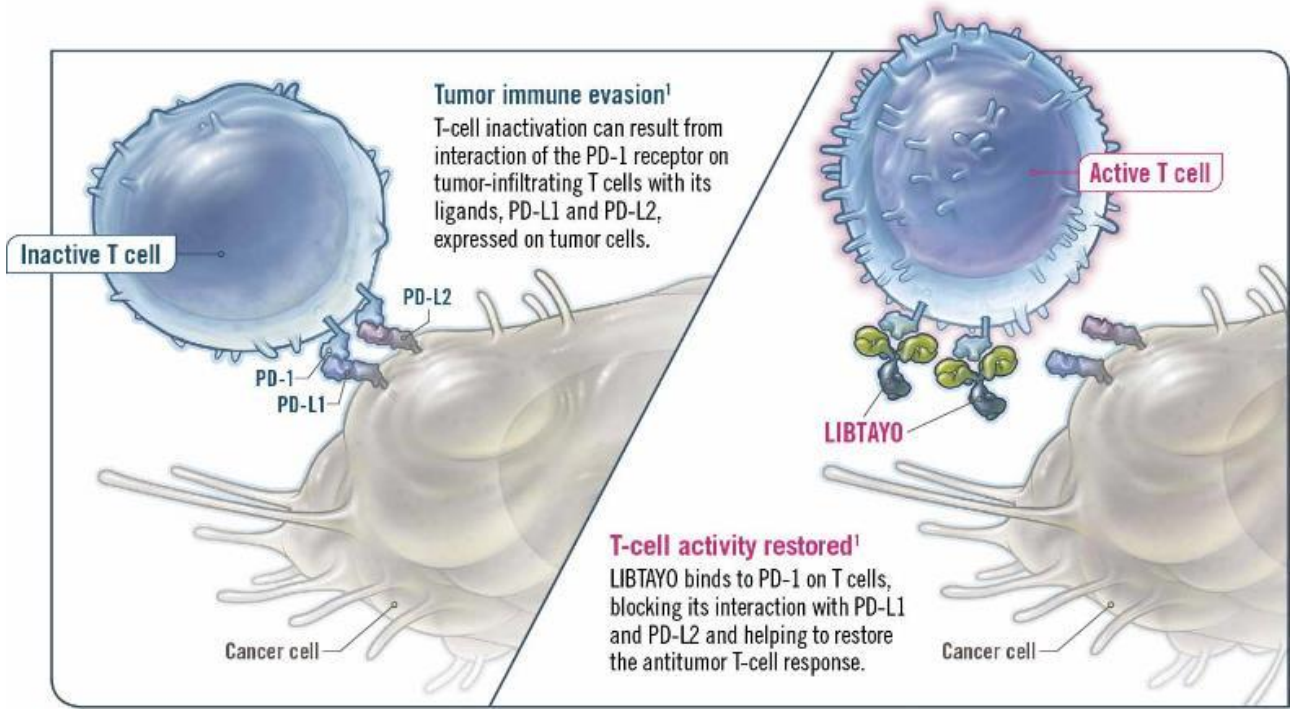


Toffoli L, Agozzino M, di Meo N, Zalaudek I, Conforti C. Locally advanced basosquamous carcinoma: Our experience with sonidegib. Dermatol Ther. 2022 12:e15436

Immunotherapy: squamous cell carcinoma

CEMIPLIMAB is an inhibitor of PD1

- 350 mg IV for 30 minutes every 3 weeks
- For locally advanced and metastatic squamous cell carcinoma



Immunotherapy: squamous cell carcinoma

CEMIPLIMAB

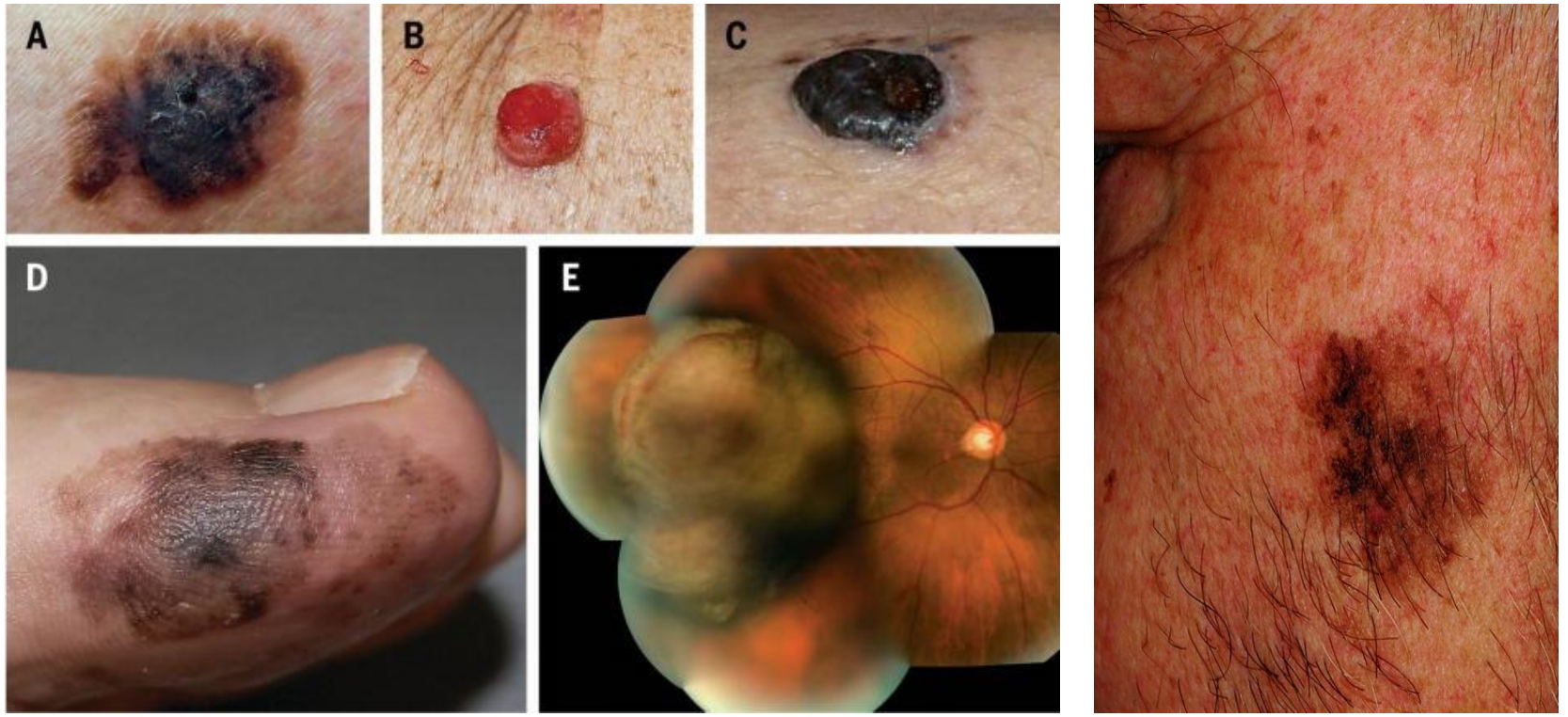
Time 0

After 3 months

Time 0

After 3 weeks

MELANOMA



Jennifer A.The melanoma revolution: from UV carcinogenesis to a new era in therapeuticsThe melanoma revolution: from UV carcinogenesis to a new era in therapeutics Science. 2014 Nov 21; 346(6212): 945–949

Ulcerated Amelanotyc Melanoma

Amelanotyc Melanoma

Cutaneous T Lymphoma

Cutaneous Lymphoma: Mechanism of ulceration

- Occurs in tumor stage of MF (not patches or plaques) and is due to rapid cells growth and necrosis
- Vascular invasion and destruction which may result in ischemic, cutaneous necrosis
- Direct cytolysis of keratinocytes by neoplastic lymphocytes

R.H. Weenig Arch. Dermatol. 2009;145(7):801-808

ADAMANTINOMA

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Malignancies associated with cutaneous ulcerative metastasis

- Oral cancer
- Breast cancer
- Hepatocellular carcinoma
- Hodgkin's lymphoma
- Non-Hodgkin's lymphoma

Perrotto J.Glick B.Lower extremity malignancies masquerating as ulcers.Ostomy Wound Manage.2006 Oct; 52(10)46-52.

NON HODGKIN LYMPHOMA

Cutaneous Metastasis
(Lung Adenocarcinoma)

MIELOMA

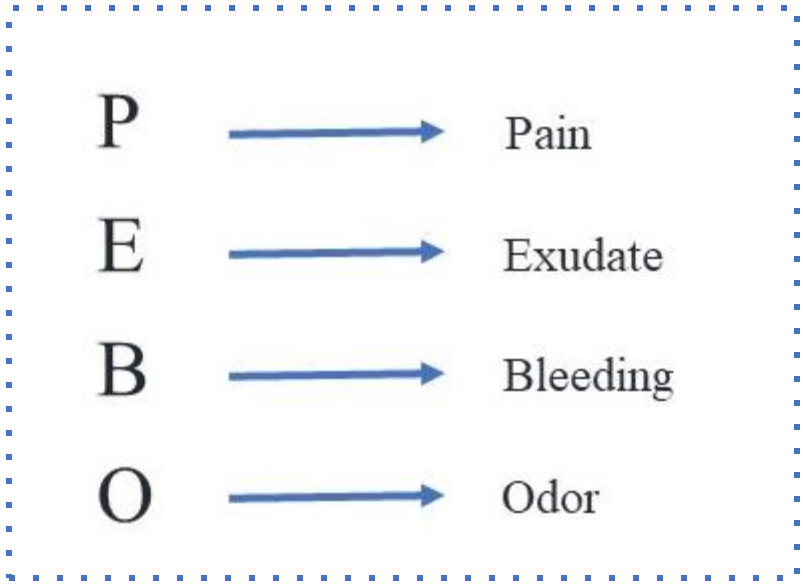
WOUNDS RESULTING FROM TREATMENT OF MALIGNANCIES

- Radiotherapy
- Chemiotherapy
- Electrochemiotherapy

Trent JT, Kirsner RS.Wounds and malignancy.Adv Skin Wound Care.2003.Jan-Feb;16(1):31-4.

Oncological wounds: clinical assessment

Clinical tool "**PEBO**" (Pain, Exudate, Bleeding, Odour) approach



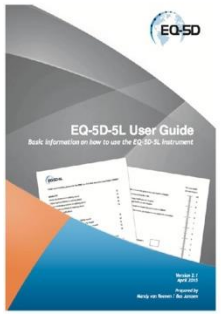
to identify a **standardized neoplastic wounds management** taking into account the features of the lesions, the patient's general condition and the emotional sphere.

Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:15347346211053478.

PEBO: Pain

- Pain scales
- Level of Pain
- Pain during the dressing change
- Pain during daily life

EQ-5D



TORONTO SCALE

Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:15347346211053478.

PEBO: Exudate

- Minimal amount
- Moderate amount
- Large amount

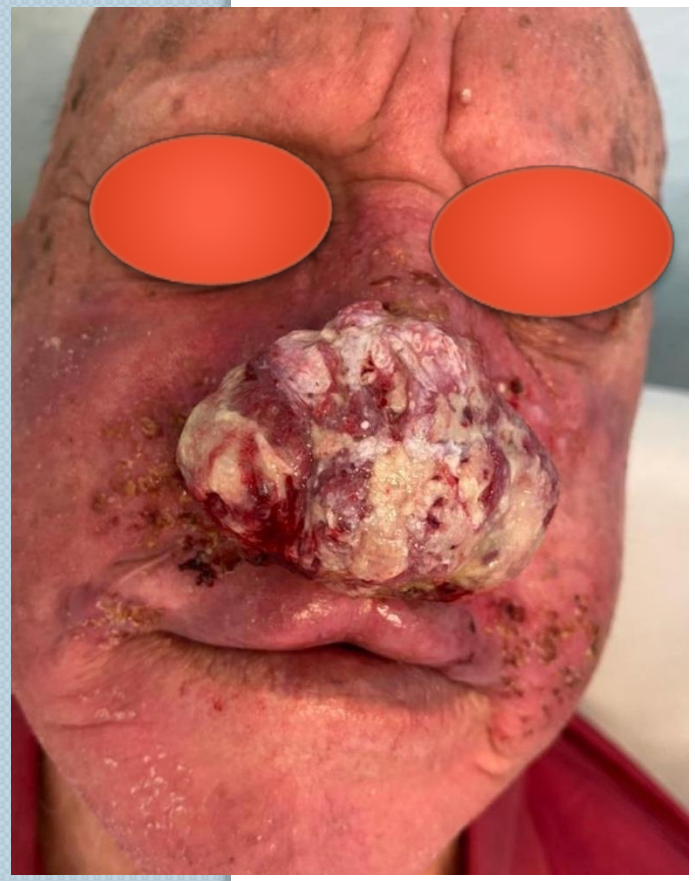
Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:1534734621053478.

PEBO: Bleeding

- Bleeding during the dressing change
- Bleeding during daily life

Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:1534734621053478.

PEBO: Odour



- Patient discomfort
- Psicological impact
- During the dressing change
- During daily life

Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:15347346211053478.

Oncological wounds: local management

Dressings Based on the PEBO Approach

ACRONYM	MFWs local management
Pain	• Irrigation of the wound with saline solution/no cytotoxic solution • Non-adherent dressing • Silicon dressing • Local anesthetic (Lidocaine cream..)
Exudate	• Frequent dressing changes • Alginate • Hydrofiber • Foams • Superabsorbent dressing
Bleeding	• Collagen • Alginate • Tranexamic acid • Soft Debridement
Odour	• Metronidazole gel or ointment or oral • Dressing with silver, PHMB, bacteria-binding dressing.. • Charcoal dressing and hyperoxidized oil medications

Janowska A, et al. Local Management of Malignant and Unresectable Fungating Wounds: PEBO Assessment. Int J Low Extrem Wounds. 2021 6:15347346211053478.

Take Home Message

- Atypical Aspects (Wound Bed, Edges, Perilesional Skin)
- Atypical Location
- Solitary or Multiple lesions
- Infiltration to underliyng and adjacent tissue
- Irregular Surrounding Skin
- Satellite lesions
- Resistant to standard treatment

Early Diagnosis

Biopsy

Prompt and Proper Therapy

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