

EDF Euroderm Excellence Course 2025

Hidradenitis suppurativa – surgery, drugs or both?



Karolina Reiprich
University Hospital Basel



Hessel H. van der Zee, MD, PhD
Erasmus University Medical Center
Rotterdam, The Netherlands

Disclosures HH van der Zee

- Abbvie
- Novartis
- UCB
- Insmmed
- Takeda
- Incyte



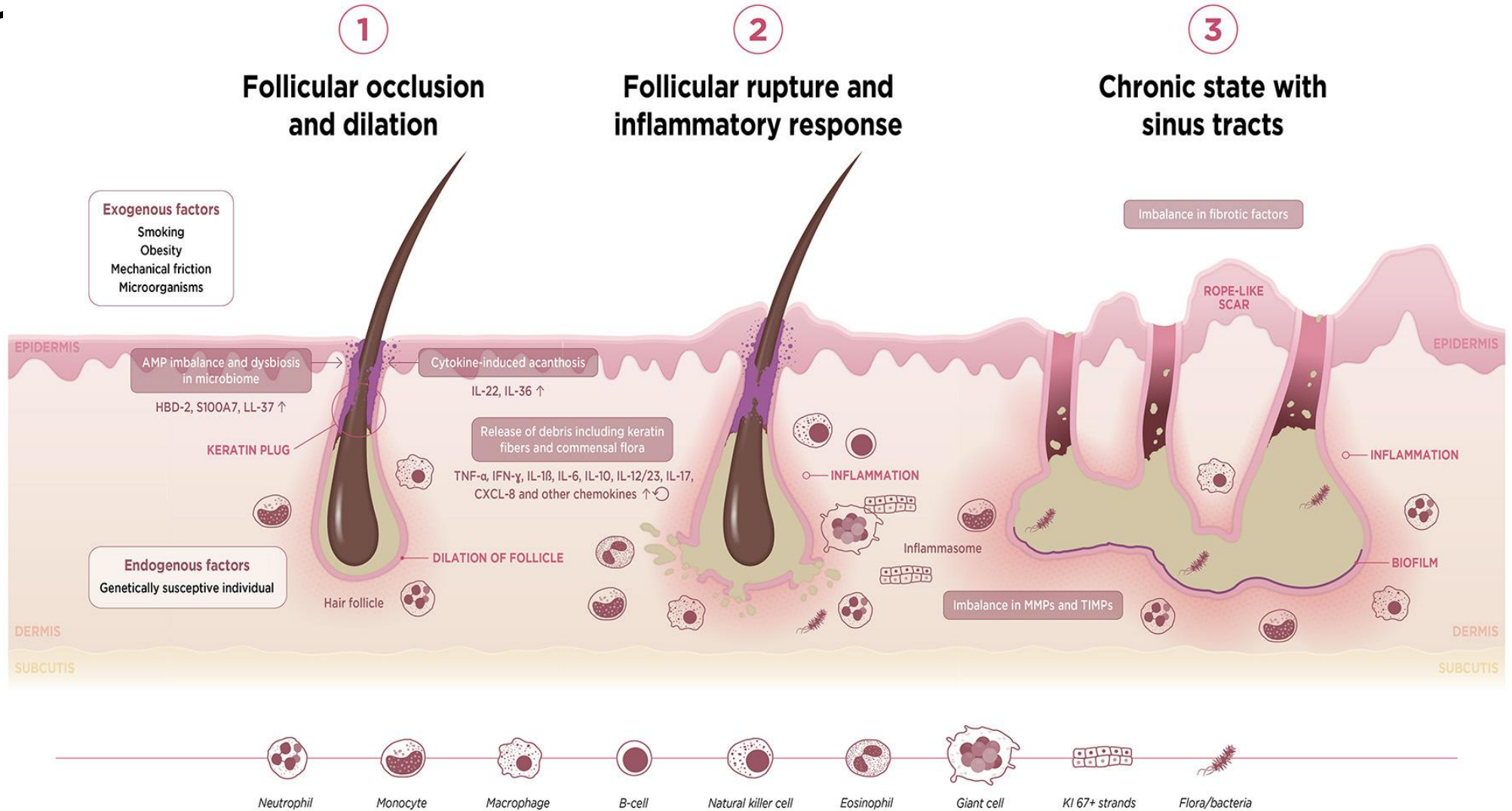
Definition of HS

- HS is a chronic, inflammatory, recurrent, debilitating skin disease of the hair follicle that usually presents after puberty with painful, deep-seated, inflamed lesions in the apocrine gland-bearing areas of the body, most commonly the axillae, inguinal and anogenital regions
- Recurrent inflammation occurring more than **2x/6 months** in the inverse regions of the body, presenting with nodules, sinus-tracts and/or scarring

Epidemiology

- Prevalence 1%
- Mean age of onset 23 years
- Male:female ratio 1:3
- HS is not an infectious disease
- Mean BMI 28,1
- 80% are current smokers
- Genetic predisposition 30%

FOLLICULITIS



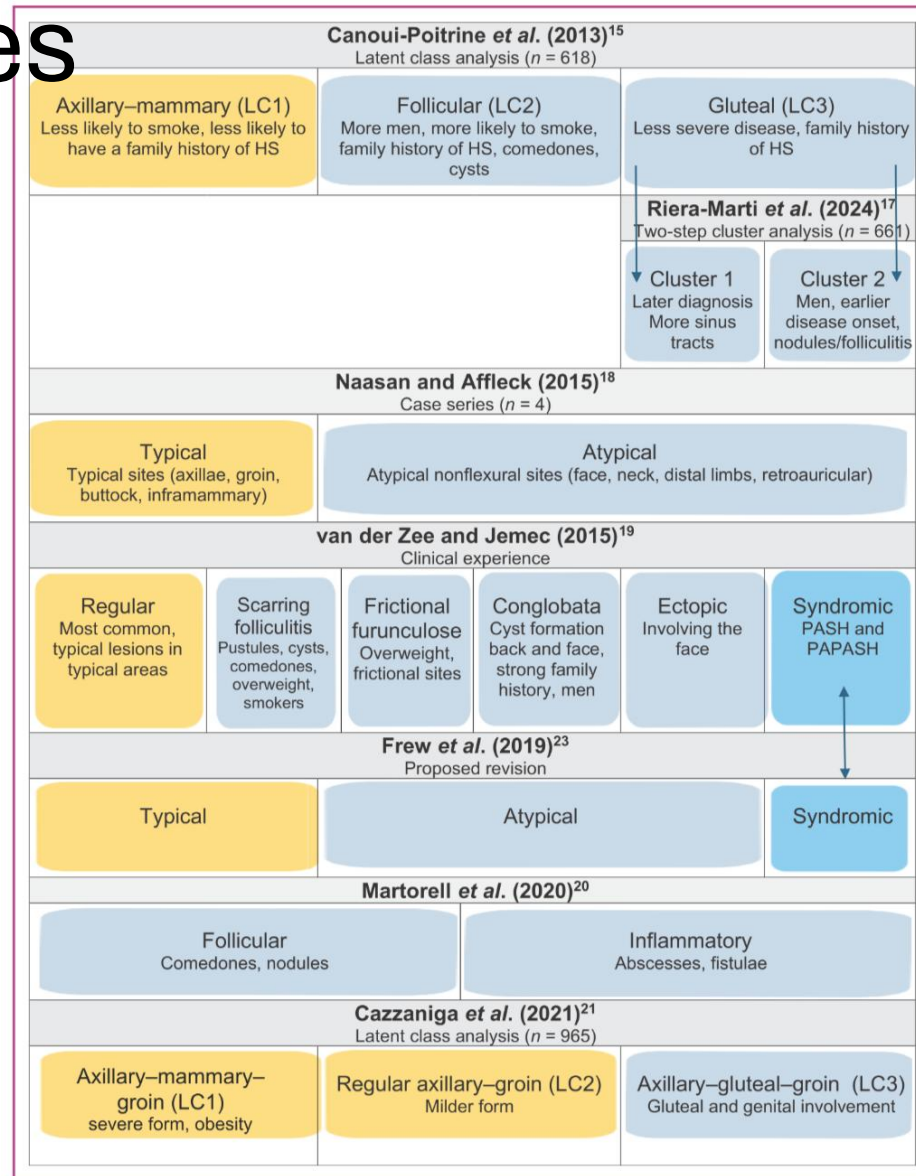
IS ALL HS THE SAME?



IS ALL HS THE SAME?

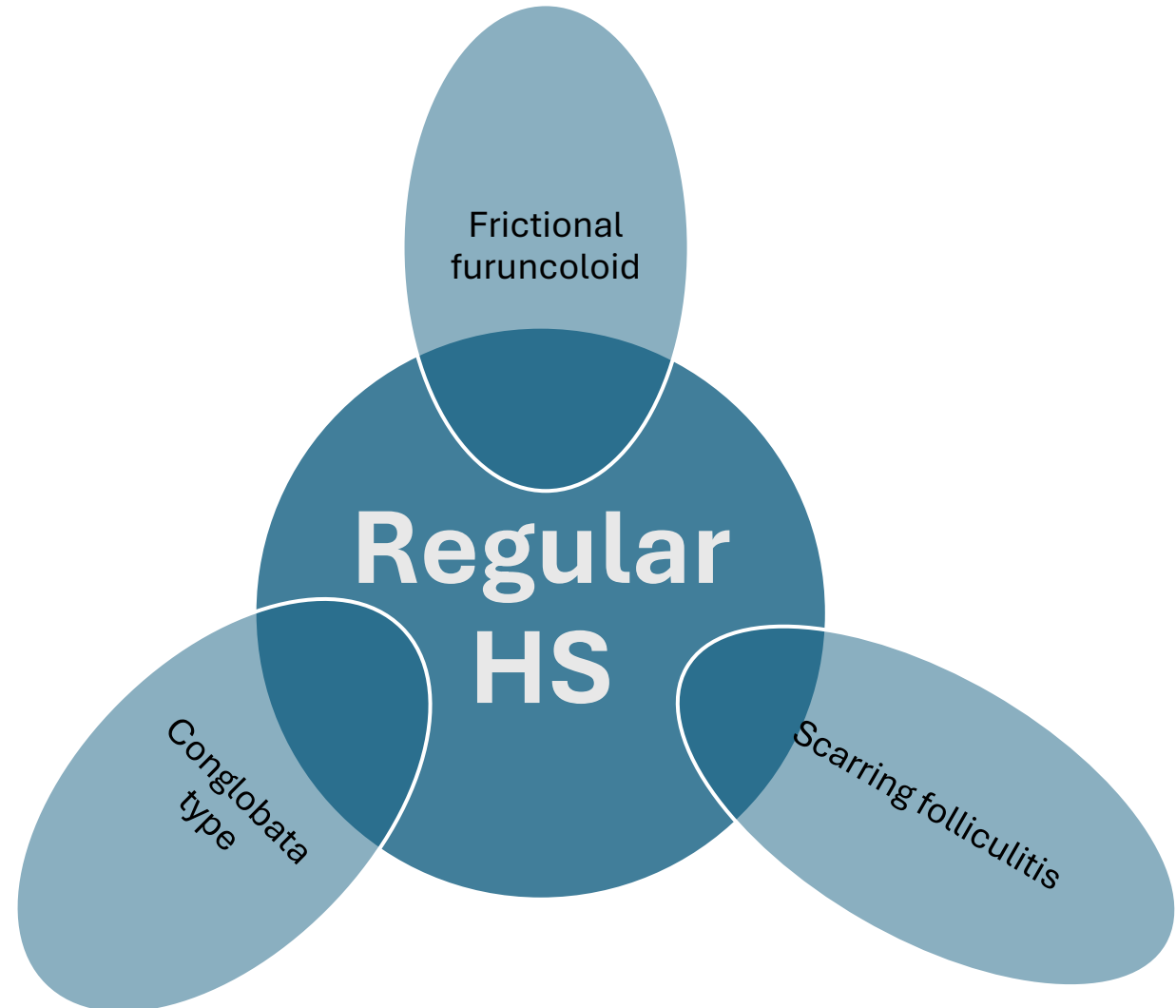
- **Phenotype** is the visible manifestation of a disease,
- **Endotype** explains its biological basis

HS Phenotypes



HS SUBTYPES; van der Zee and Jemec

1. Regular type
2. Frictional furunculoid type
3. Scarring folliculitis type
4. Conglobata type



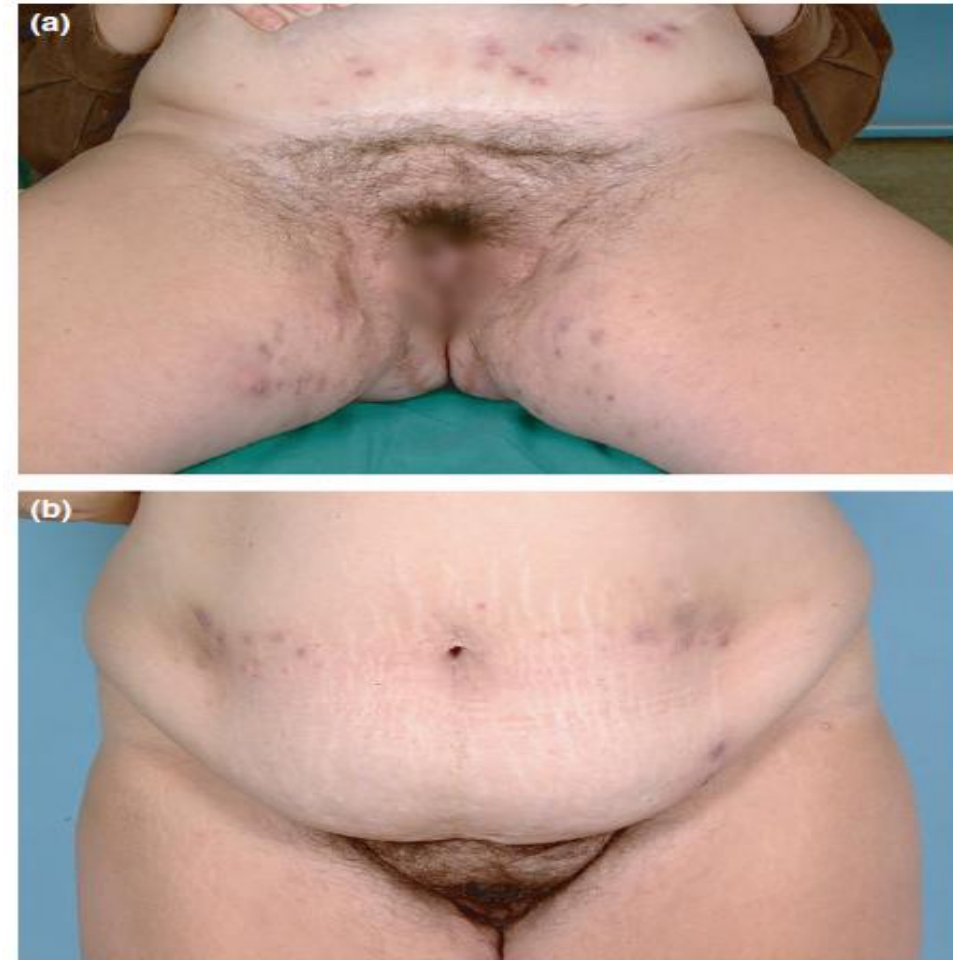
Regular type

- Fulfilling all the diagnostic criteria
- **HS patients who lack other specific characteristics**



Frictional furunculoid type

- Multiple deep nodules and abscesses on sites exposed to enhanced friction, such as the abdomen, thighs and buttocks
- Formation of tunnels and fistulas in these areas is unusual
- Overweight



Scarring folliculitis type

- pustules, cysts, superficial nodules, depressed cribriform scarring and doubles comedos
- Frequently involved areas are the buttocks, inguinal region, and pubic region
- Frequently overweight
- Often smoke
- Formation of sinus tracts and fistulas is unusual

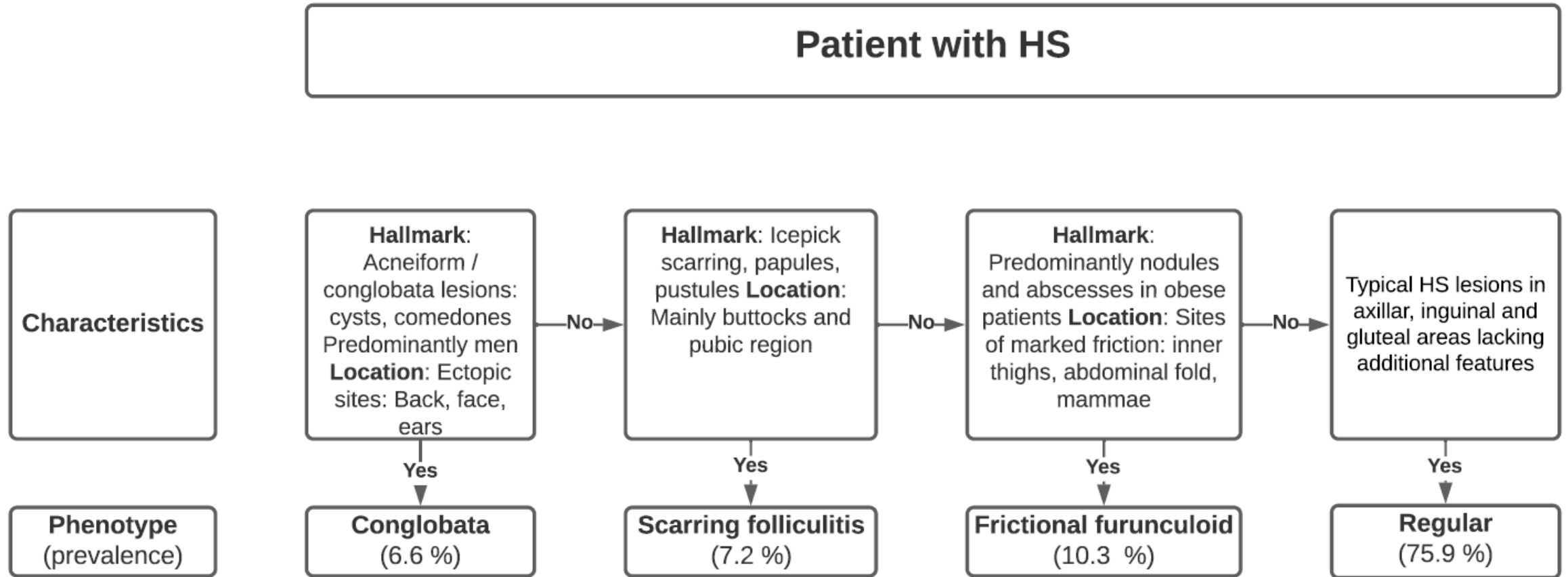


Conglobata type

- Acne conglobata lesions on especially the back but also the face
- Cyst formation
- HS usually runs in the family
- HS is moderate to severe (Hurley 2-3)
- Usually men
- Usually not overweight



HS SUBTYPES; van der Zee and Jemec



IHS4 score → pharmacological treatment



Inflammation



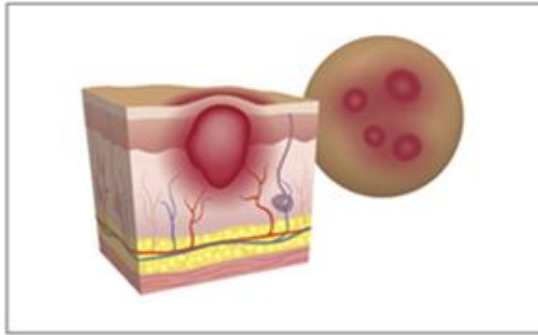
Scarring tissue destruction

The Hurley score → surgical treatment

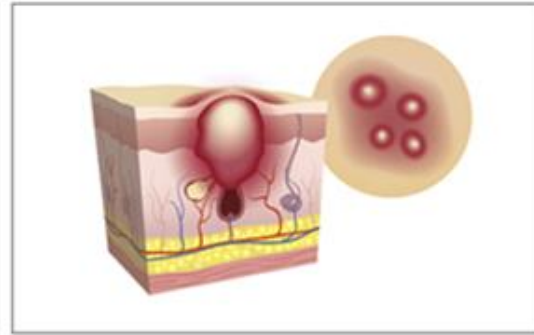
Horváth B, Janse IC, Blok JL, Driessen RJ, Boer J, Mekkes JR, Prens EP, van der Zee HH. Hurley Staging Refined: A Proposal by the Dutch Hidradenitis Suppurativa Expert Group. Acta Derm Venereol. 2017 Mar 10;97(3):412-413.

Hidradenitis Suppurativa Lesion Types

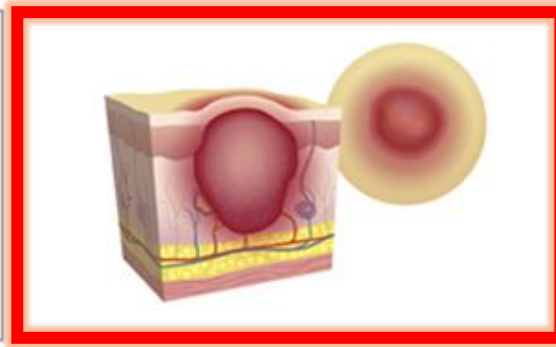
A Papule



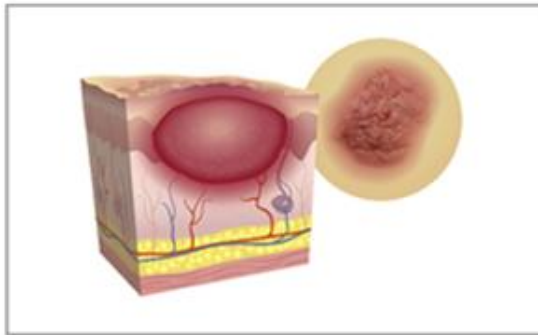
B Pustule



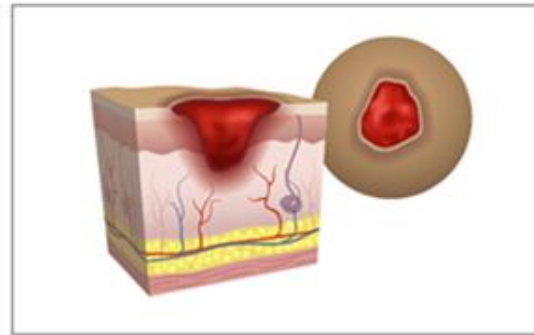
C Nodule



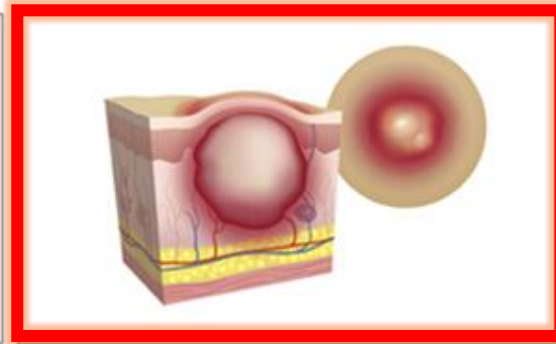
D Plaque



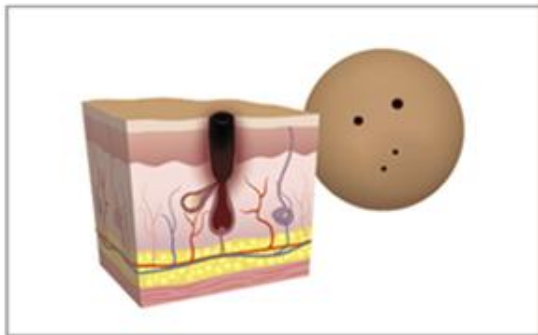
E Ulcer



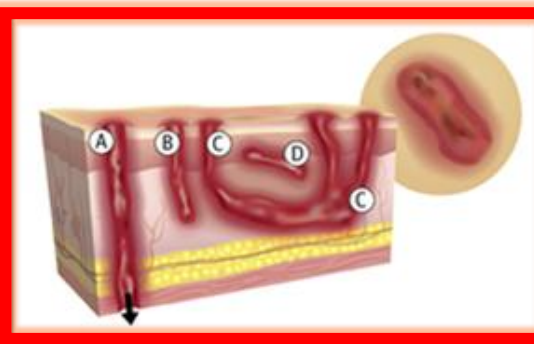
F Abscess



G Comedo



H Tunnel



Frew JW, Lowes MA, Goldfarb N, et al. Global Harmonization of Morphological Definitions in Hidradenitis Suppurativa for a Proposed Glossary. *JAMA Dermatol.* 2021;157(4):449–455.

IHS4-Score (International Hidradenitis Suppurativa Severity Score)

Dynamic, continuous outcome measure

Nodule

1 point

Abscess

2 points

Draining tunnel

4 points

Disease classification system

Mild

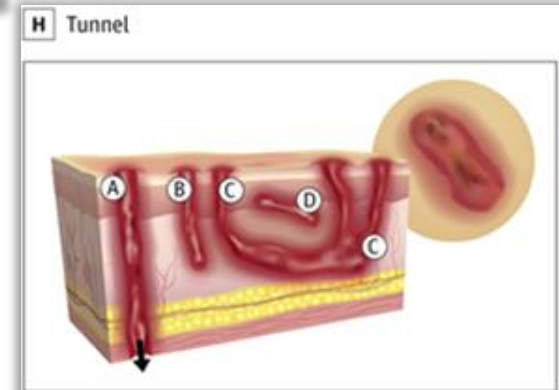
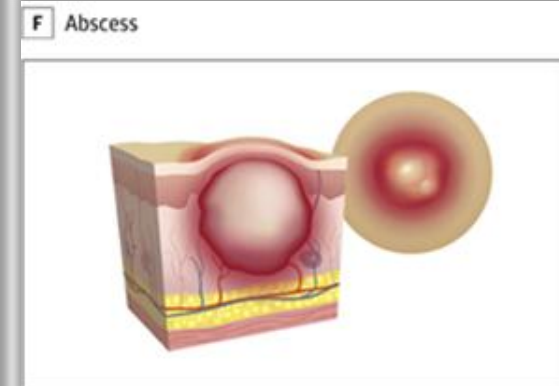
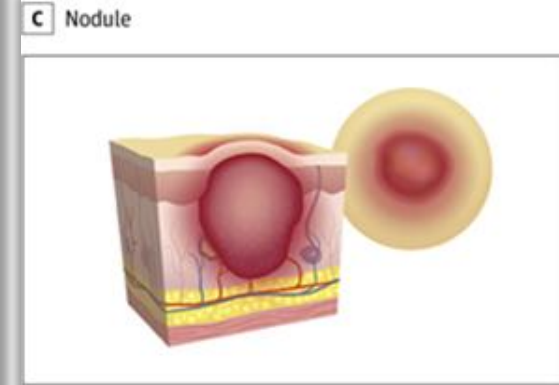
≤3 points

Moderate

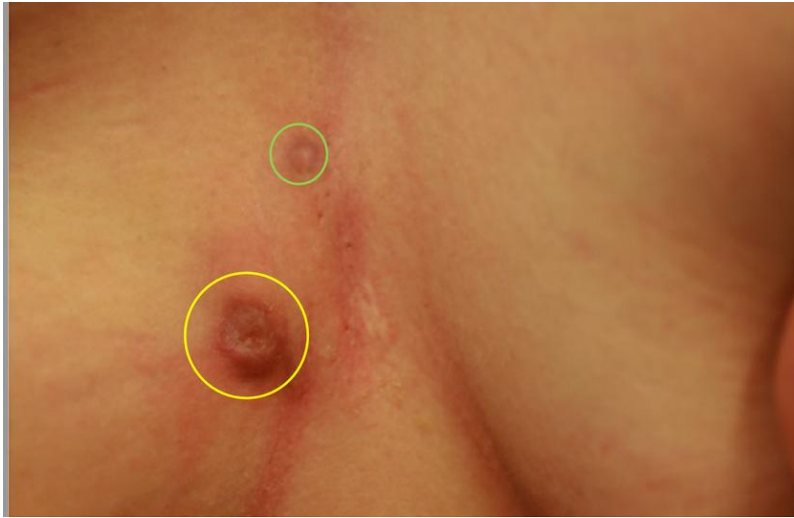
4–10 points

Severe

≥11 points

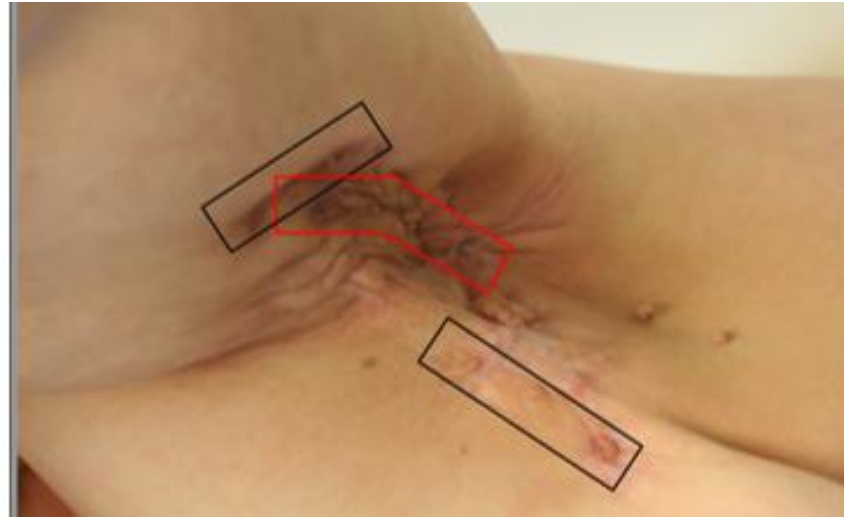


Short exercise



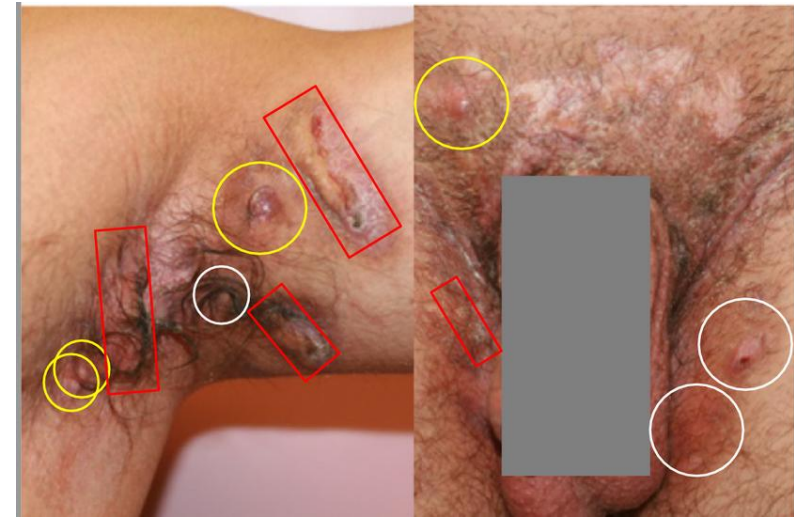
1 papule (<10 mm) = 0 points
1 abscess × 2 = 2 points

IHS4 = 2 → mild HS



2 non-draining fistulas = 0
1 draining fistula × 4 = 4

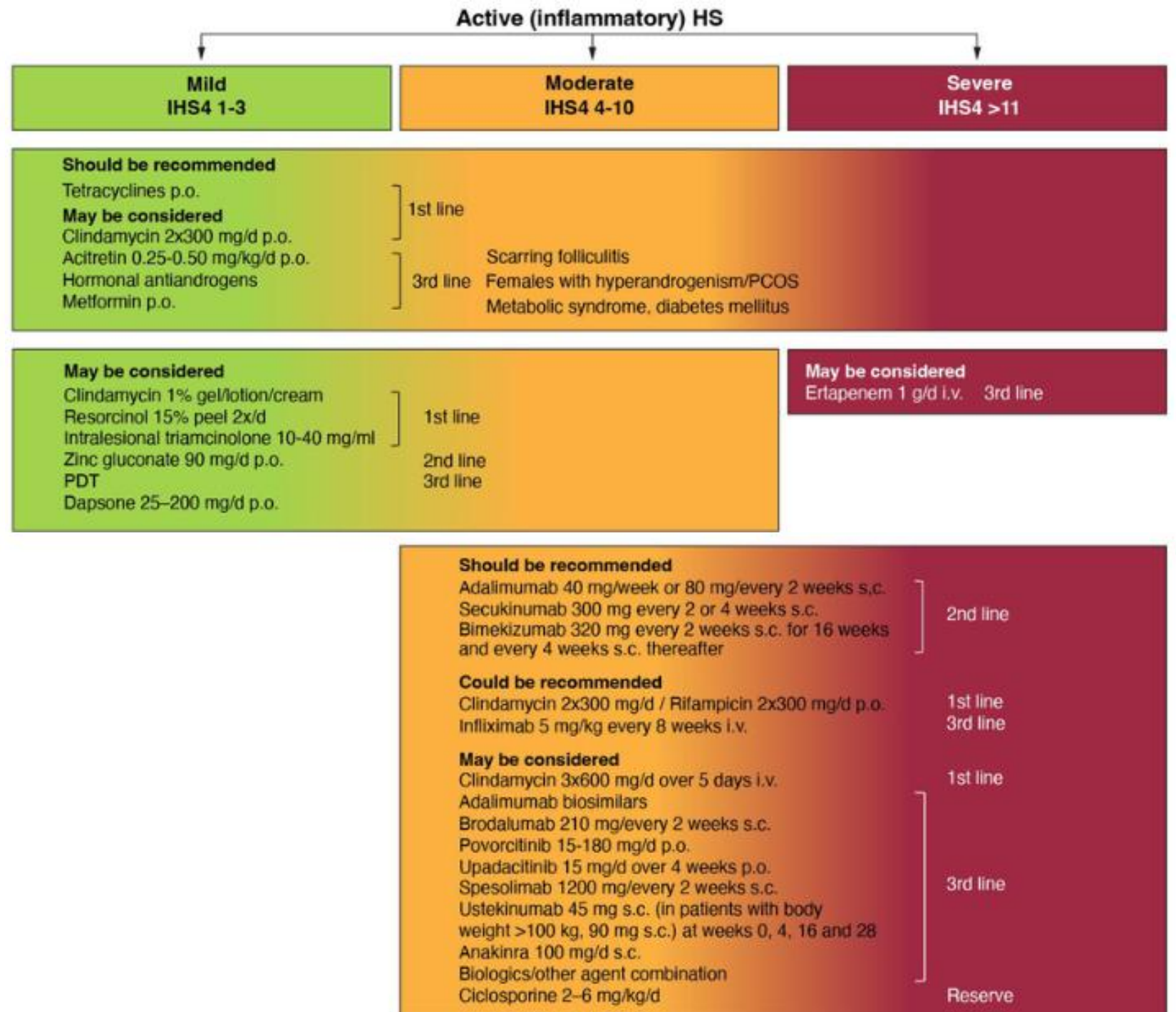
IHS4 = 4 → moderate HS



3 nodules × 1 = 3 points
4 abscesses × 2 = 8 points
4 draining fistulas × 4 = 16 points

IHS4 = 27 → severe HS

European S2k guidelines for hidraden inversa part 2: Treatment



Active (inflammatory) HS

Mild
IHS4 1-3

Moderate
IHS4 4-10

Severe
IHS4 >11

Should be recommended

Adalimumab 40 mg/week or 80 mg/every 2 weeks s.c.
 Secukinumab 300 mg every 2 or 4 weeks s.c.
 Bimekizumab 320 mg every 2 weeks s.c. for 16 weeks
 and every 4 weeks s.c. thereafter

2nd line

Could be recommended

Clindamycin 2x300 mg/d / Rifampicin 2x300 mg/d p.o.
 Infliximab 5 mg/kg every 8 weeks i.v.

1st line
 3rd line

May be considered

Clindamycin 3x600 mg/d over 5 days i.v.
 Adalimumab biosimilars
 Brodalumab 210 mg/every 2 weeks s.c.
 Povorcitinib 15-180 mg/d p.o.
 Upadacitinib 15 mg/d over 4 weeks p.o.
 Spesolimab 1200 mg/every 2 weeks s.c.
 Ustekinumab 45 mg s.c. (in patients with body
 weight >100 kg, 90 mg s.c.) at weeks 0, 4, 16 and 28
 Anakinra 100 mg/d s.c.
 Biologics/other agent combination
 Ciclosporine 2-6 mg/kg/d

1st line

3rd line

Reserve

Biologics/other agent combination
 Ciclosporine 2-6 mg/kg/d

Reserve

Antibiotics

- **Doxycycline**

- Comparable effectiveness to rifampicin + clindamycin, but with a more favorable safety profile.
- The efficacy of 40 mg/day subantimicrobial, modified-release doxycycline is similar to 100 mg twice daily, with approximately 64% of patients achieving HiSCR after 12 weeks.
- Other tetracyclines show similar efficacy.

- **Clindamycin Monotherapy**

Clindamycin may also be effective as monotherapy in selected cases.

- **Antibiotic Resistance**

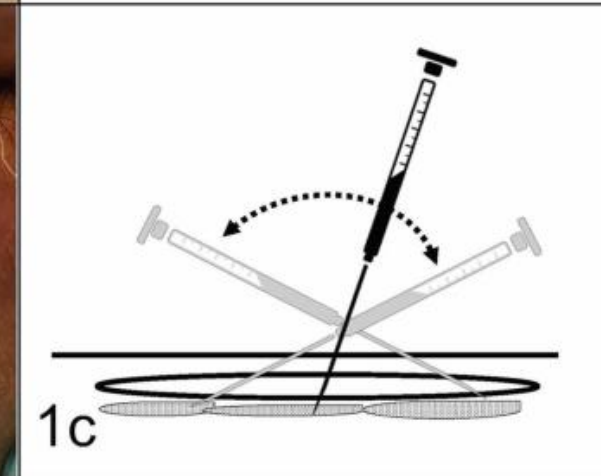
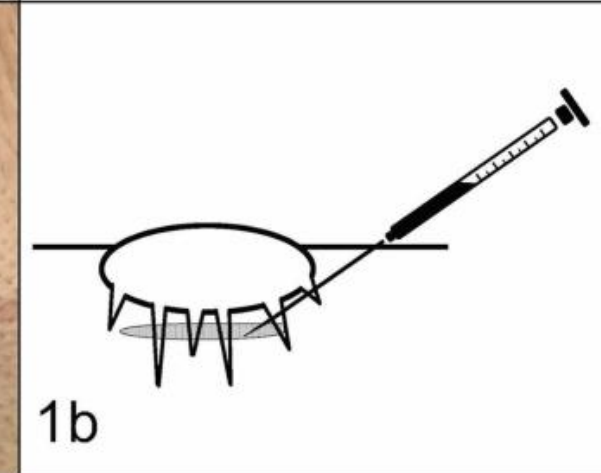
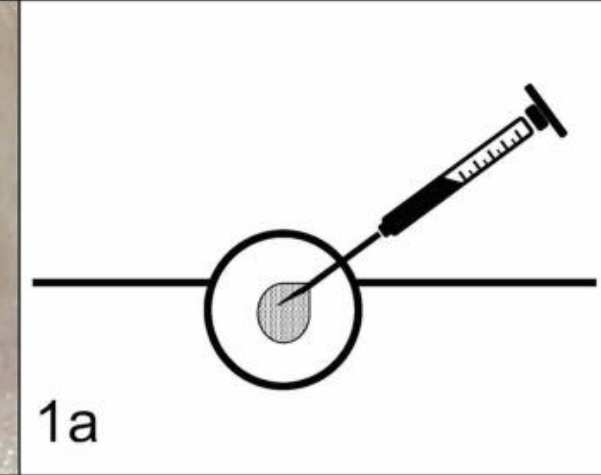
Long-term antibiotic use can lead to antimicrobial resistance, which remains a significant concern. However, no relevant antimicrobial resistance has been observed following treatment with tetracyclines or oral clindamycin.

It is essential that the prescribing physician carefully evaluate the benefits and risks of antibiotic therapy.

Intralesionale Triamcinolon Injektion (TAC 10–40 mg/mL)

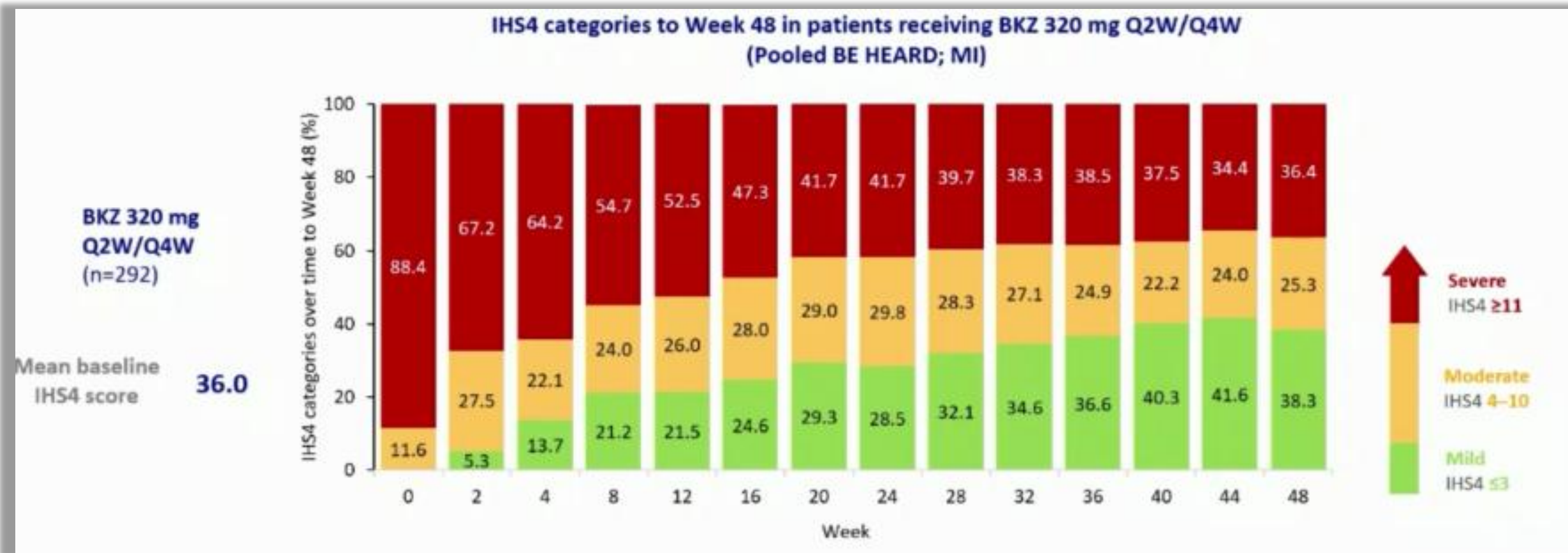
- Rapid pain reduction (within 1 day)
- Clinical improvement often within 7 days
- Can be combined with systemic therapy
- Ultrasound can be used for guidance and follow-up assessment
- Repeat treatment possible after 1 week to 3 months

L. Salvador-Rodríguez et al., Ultrasound-assisted intralesional corticosteroid infiltrations for patients with hidradenitis suppurativa, Sci Rep. 2020 Aug 7;10(1):13363.



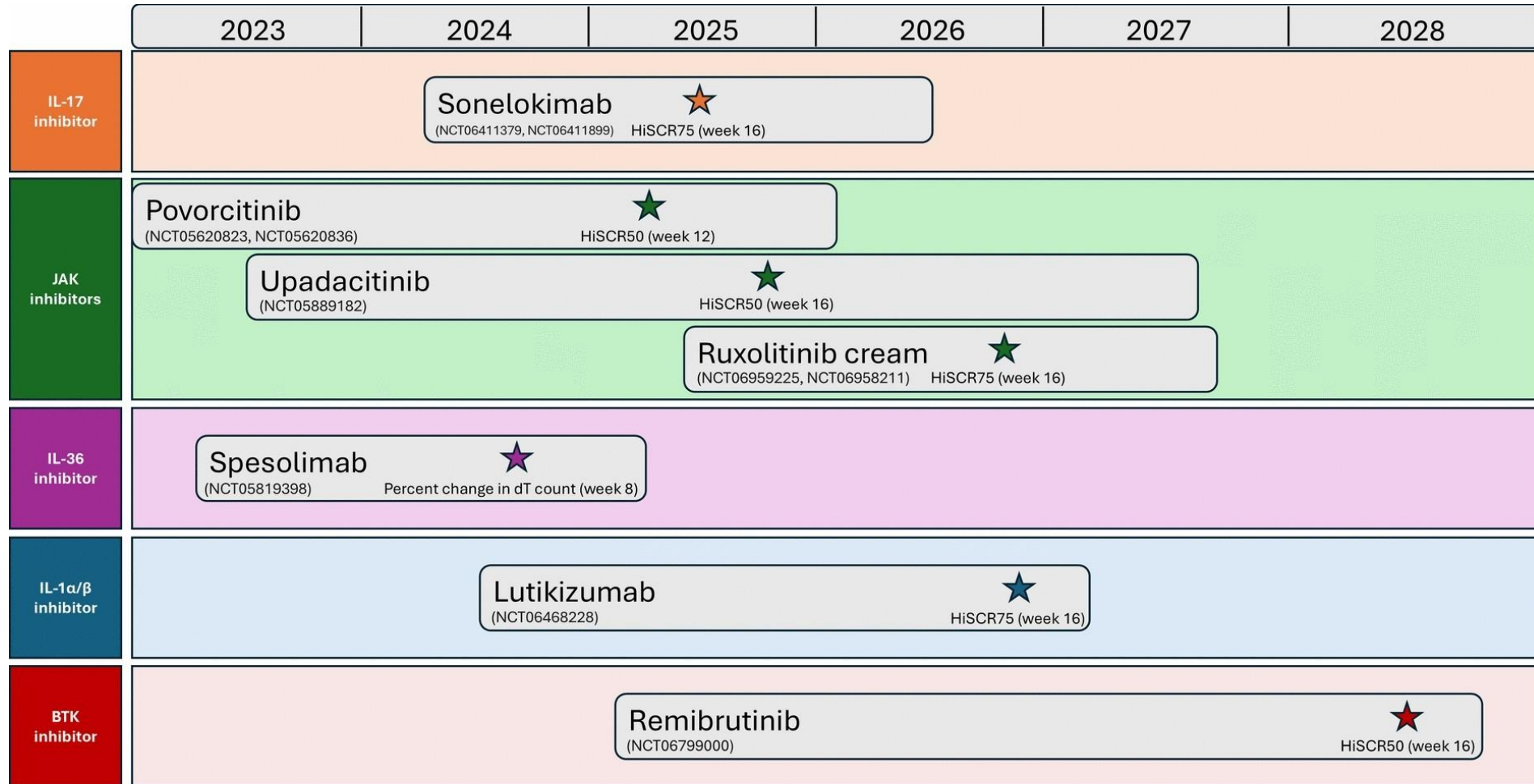
Efficacy of Bimekizumab

Results From the Phase 3 Studies BE HEARD I & II and the Open-Label Extension Study BE HEARD EXT



More than 60% of patients achieved a mild or moderate IHS4 disease severity after 48 weeks of treatment with bimekizumab.

Ongoing Phase 3 Clinical Trials



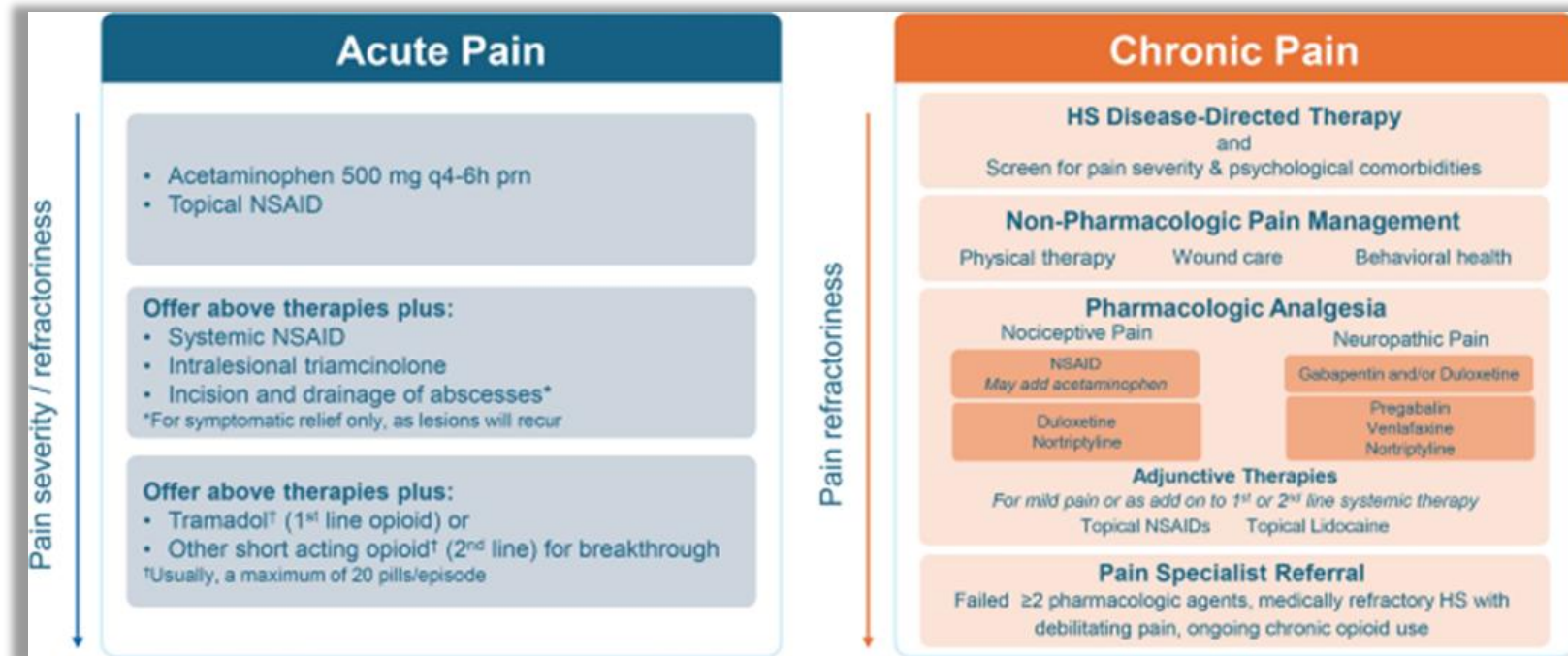
 Estimated primary endpoint completion date

Garg, A., *et al.* Current Treatments and Future Directions for Hidradenitis Suppurativa: a Narrative Review of Completed and Ongoing Phase 3 Clinical Trials of Biologic Therapies. *Dermatol Ther (Heidelb)* 15, 2361–2377 (2025).

Multidisciplinary Approach

- Cessation of smoking
- Weights reduction
- Psychological intervention

Pain Management



Screen patients for comorbidities associated with hidradenitis suppurativa^{2a}

Smoking
Metabolic syndrome
Type 2 diabetes
Follicular occlusion tetrad ^b
Acne
Depression/anxiety
Inflammatory bowel disease
Polycystic ovary syndrome
Impaired sexual health
Pyoderma gangrenosum and autoimmune syndromes ^c
Arthropathies ^c
Squamous cell carcinoma ^d

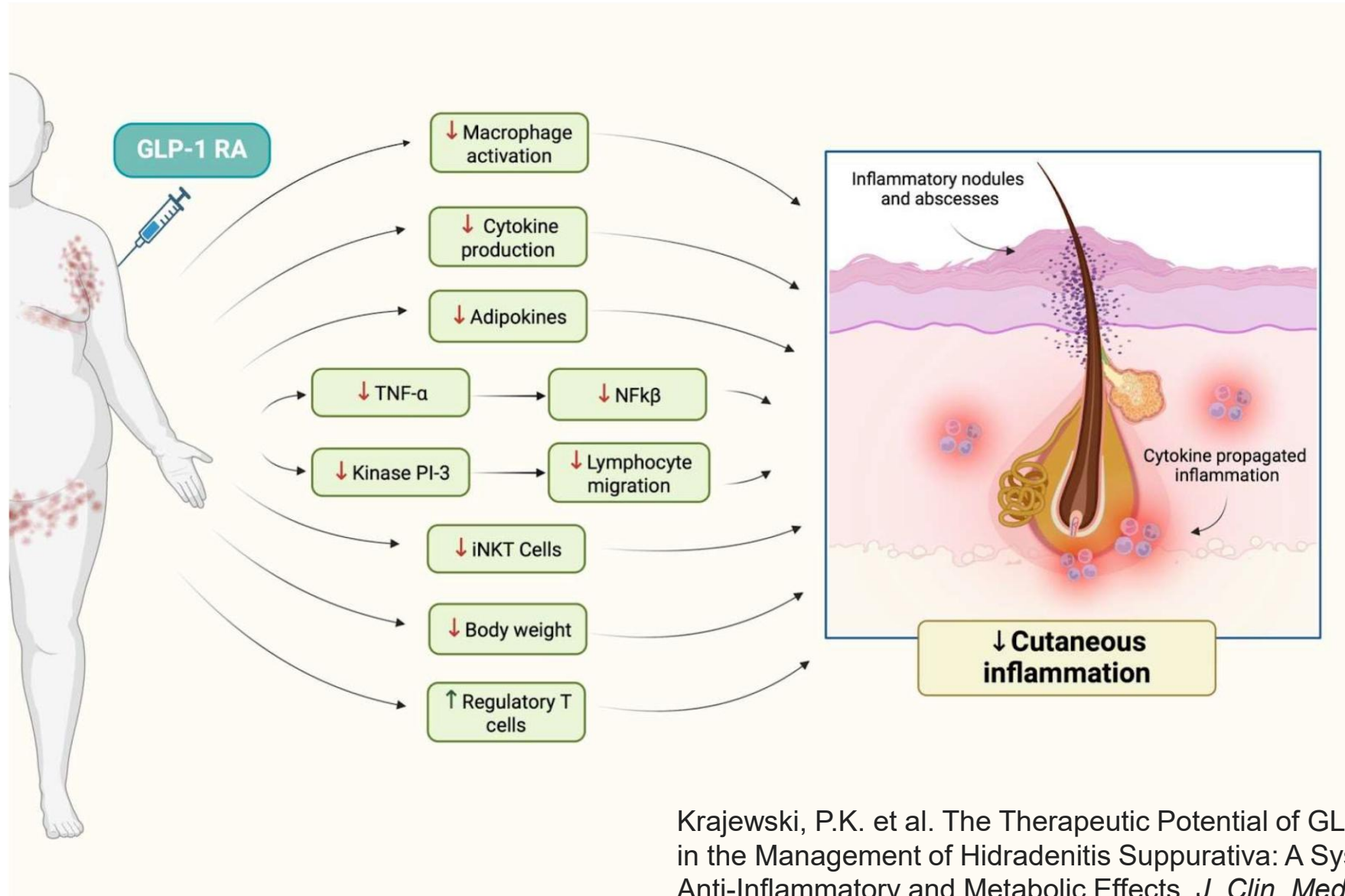
^a The strength of recommendation to screen for these conditions is **A**, with 3 exceptions: pyoderma and arthropathies (**B**) and squamous cell carcinoma (**C**). See page E1 for SOR definitions.

^b Hidradenitis suppurativa, acne conglobata, dissecting cellulitis of the scalp, and pilonidal sinus.

^c Only if suggested by review of systems.

^d Of the hidradenitis suppurativa-affected skin.

The Therapeutic Potential of GLP-1 Receptor Agonists in the Management of Hidradenitis Suppurativa



Krajewski, P.K. et al. The Therapeutic Potential of GLP-1 Receptor Agonists in the Management of Hidradenitis Suppurativa: A Systematic Review of Anti-Inflammatory and Metabolic Effects. *J. Clin. Med.* 2024, 13, 6292.

Clinical Case No. 1

Previous Therapy

- **2013–2022:** Recurrent abscesses with multiple incisions
- **2020:** Doxycycline 2×100 mg daily → **good response**
- **2021:** Aldactone 100 mg daily → **no effect**
- **2021:** Zinc gluconate (~90 mg) → **no effect**
- **05/2023–09/2024:** Doxycycline 1–2×100 mg daily

Age / Sex: **37-year-old woman**

Ethnicity: **Caucasian**

Smoking status: **Active smoker**

Duration of disease: **12 years**



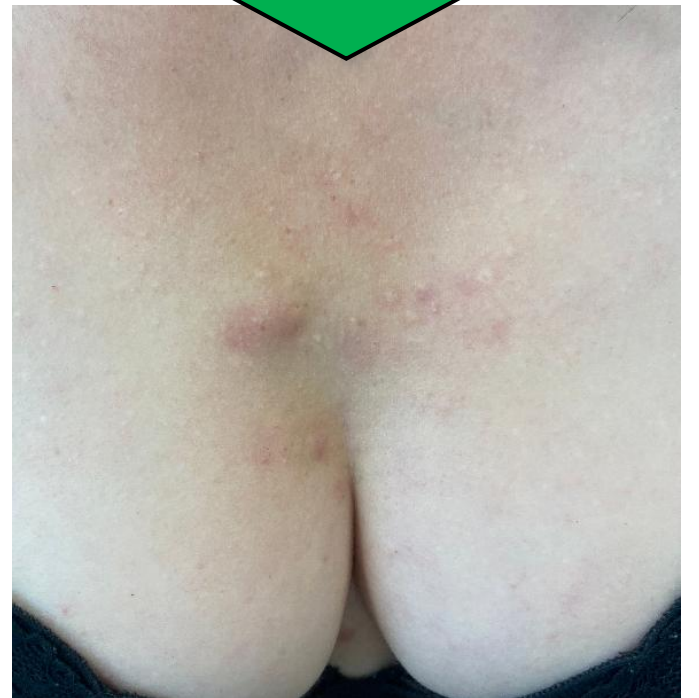
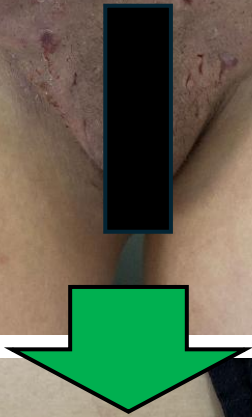
Clinical Case No. 1

Clinical Findings

- Multiple inflammatory nodules and one abscess
- Localization: Mons pubis, intramammary region, right inframammary fold, perianal region, right axilla
- Painful lesions affecting quality of life (DLQI 21)
- 06/2024: IHS4 = 13 points

Severe HS -> 07/2024 Start Adalimumab





**9 months
later ...**

Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

Previous Therapy

- Multiple abscess incisions and radical excisions
- Doxycycline (without sustained remission)
- Combination therapy with clindamycin and rifampicin for 3 months (without sustained remission)
- Isotretinoin (no effect on HS)

Age / Sex: **50-year-old woman**

Ethnicity: **Caucasian**

Smoking status: **Active smoker**

Duration of disease: **25 years**

Other diseases: **acne conglobata in the age of 37**



Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

- The patient was included in a clinical trial combining weekly administration of 40 mg adalimumab s.c. vs. placebo for 3 months, followed by continuation of adalimumab treatment in the same dose over 15 months.
- She described an improvement of the HS lesions and reduction of flares under adalimumab.
- After this period, the patient was lost to follow-up. The general practitioner discontinued adalimumab treatment, judging that the treatment lacked efficacy.

Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

One month after discontinuation of adalimumab:

- Confluent erythematous pustules on the palms (Figure 1a) and soles (Figure 1h) with psoriasis-like scaling
- Intermittent shoulders and knee pain and swelling

Dermatohistology:

- Pustular psoriasis with neutrophilic abscesses

Bone scan:

- Arthritis and synovitis
- No typical signs of osteitis or psoriasis arthritis

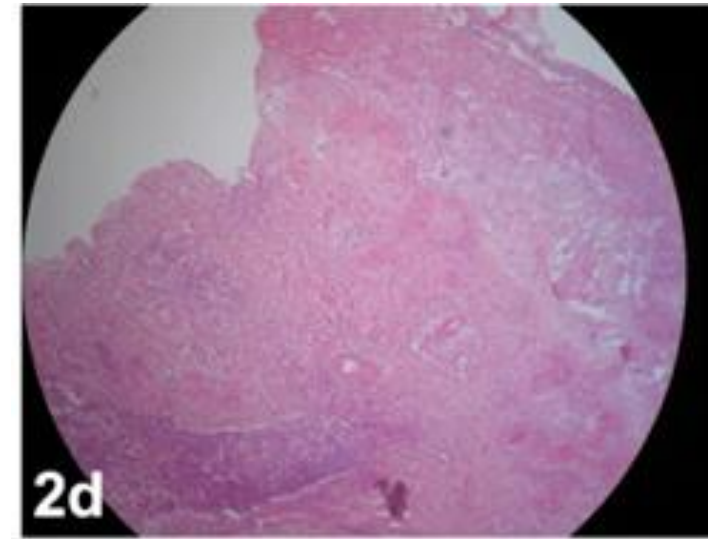


Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

Two month after discontinuation of adalimumab:

- Disseminated, painful pustules on both lower legs (Figure 1e), which progressed to painful ulcers (Figure 1f) with elevated violet margins.
- The histopathological evaluation consistent with pyoderma gangrenosum (Figure 2d)



Autoinflammatory syndromes of Hidradenitis Suppurativa

PASH: Pyoderma gangrenosum, **A**cne, and **S**uppurative **H**idradenitis

PAPASH: Pyogenic **A**rthritis, **P**yperderma gangrenosum, **A**cne, and **S**uppurative **H**idradenitis

PsAPASH: **P**soriatic **A**rthritis, **P**yperderma gangrenosum, **A**cne, and **S**uppurative **H**idradenitis

PASS: Pyoderma gangrenosum, **A**cne, **S**uppurative hidradenitis, and ankylosing **S**pondylitis

PsAPSASH: pustular **P**soriasis, **A**rthritis, **P**yperderma gangrenosum, **S**ynovitis, **A**cne, and **S**uppurative **H**idradenitis

SAPHO with HS: **S**ynovitis, **A**cne, **P**ustulosis, **H**yperostosis, **O**steitis

- severe, treatment-refractory HS
- treatment evidence is scarce and based mainly on case reports

Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

PsAPSASH: pustular psoriasis, arthritis, pyoderma gangrenosum, synovitis, acne, and suppurative hidradenitis

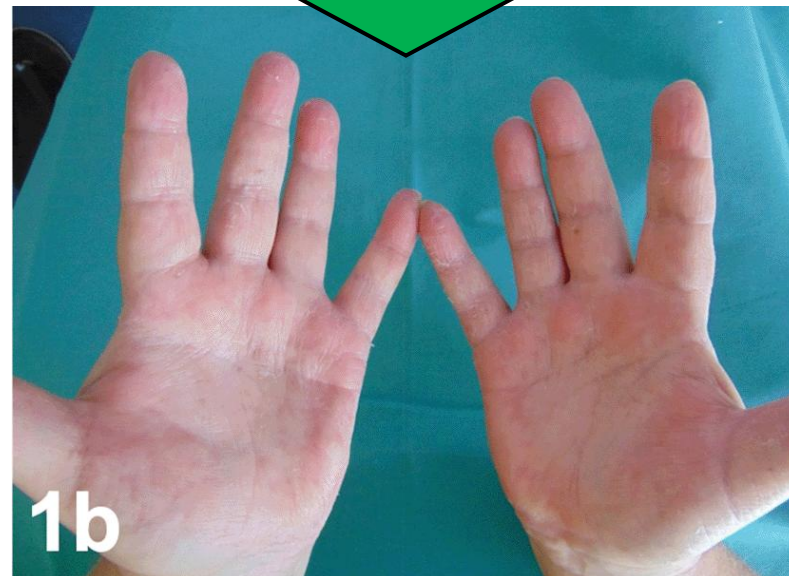
- IHS4 score of 17 and a DLQI score of 23.
- therapy with secukinumab 300 mg s.c weekly for the first month and then monthly

Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

Therapy with secukinumab 300 mg s.c weekly for the first month and then monthly

4 months later ...



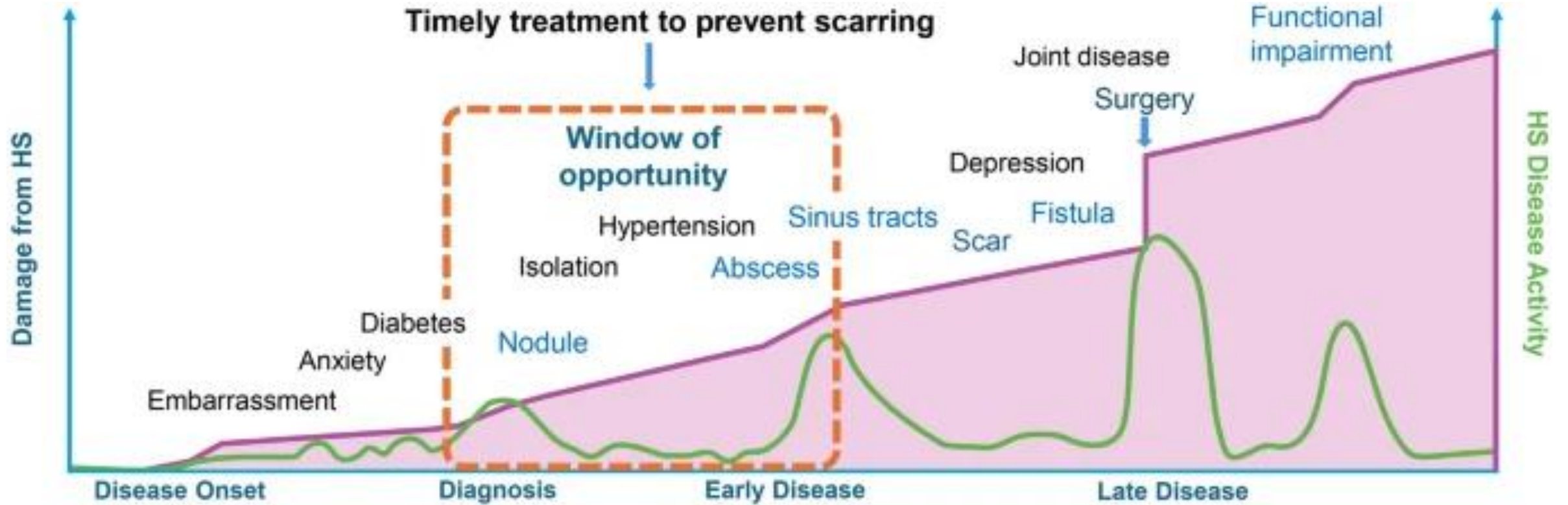
Clinical Case No. 2

Courtesy of PD Dr. med. habil. Nikolakis, SKD

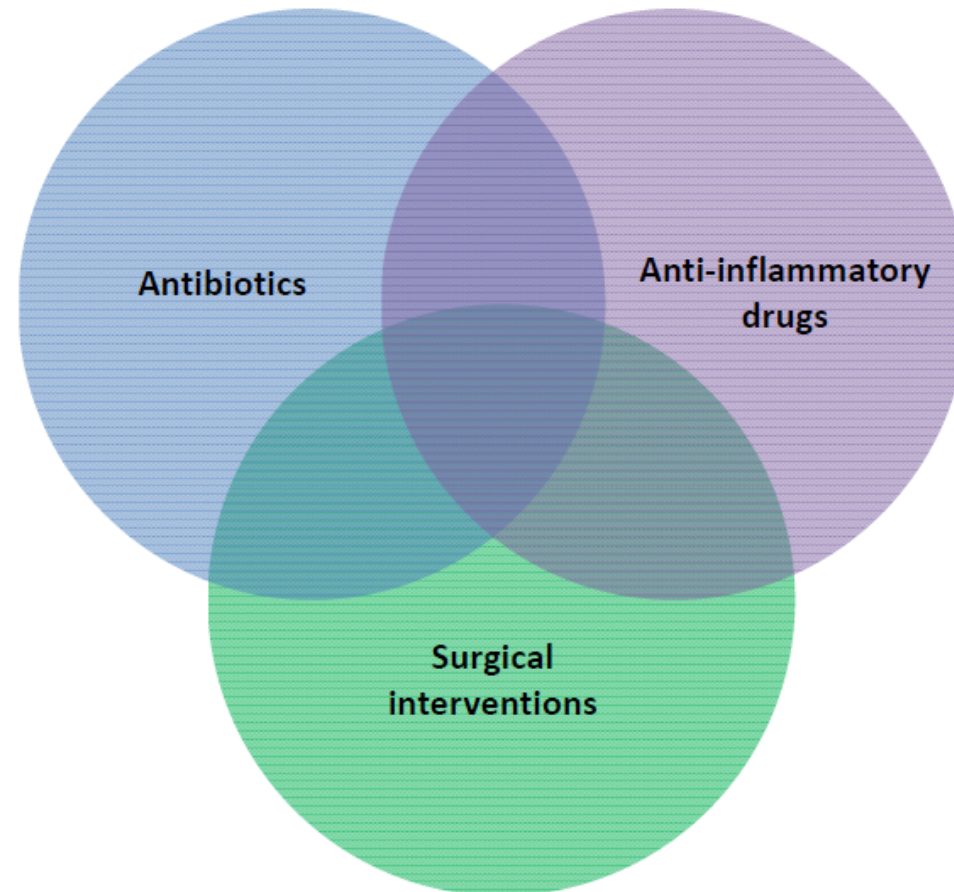
The PG showed no improvement and 100 mg prednisolone daily i.v. over three days was added to the treatment, which was subsequently tapered over one month. The treatment led to an improvement of the PG ([Figure 1g](#)).



Window of opportunity

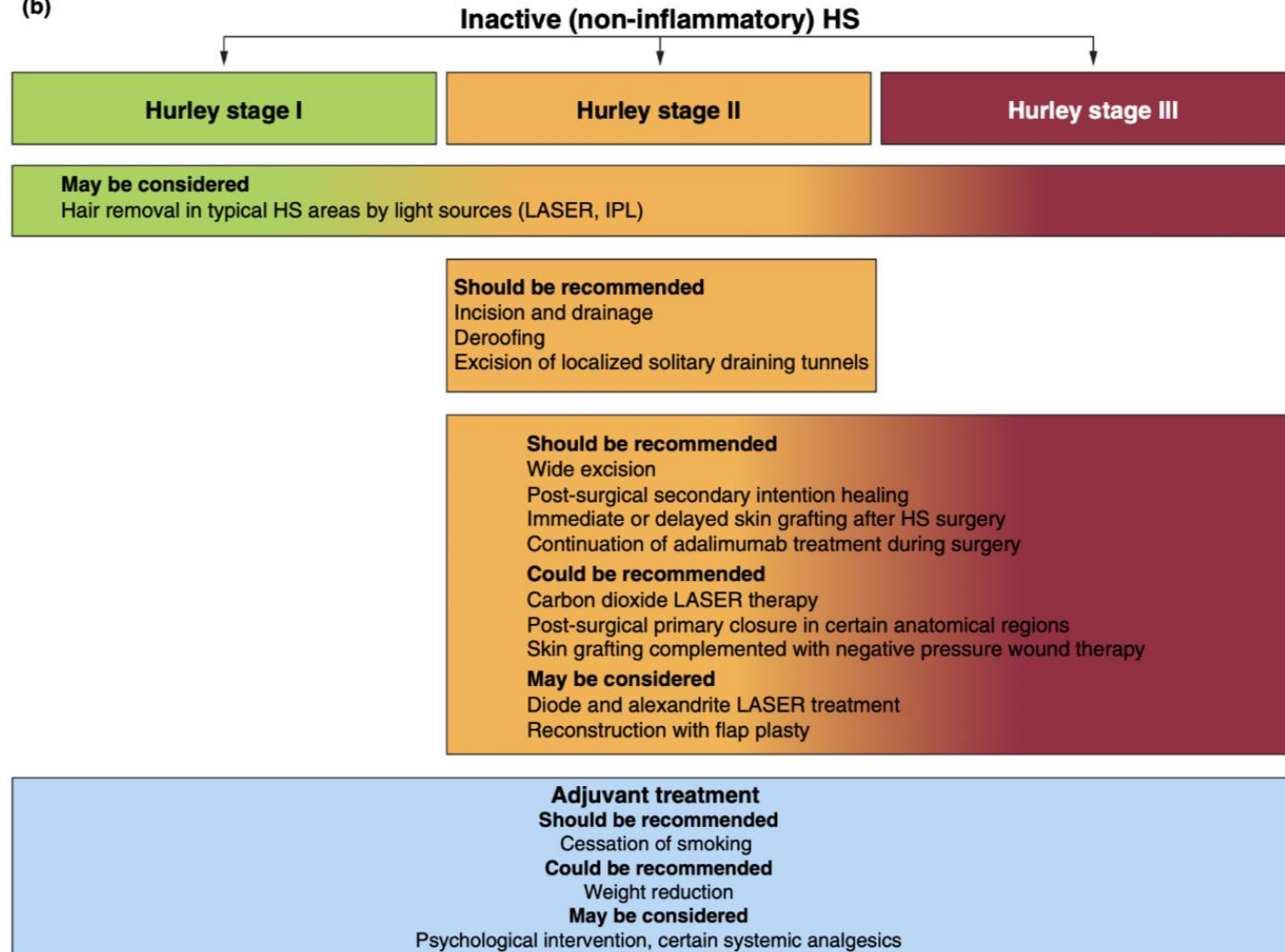


Surgery is part of an integrated approach of managing HS



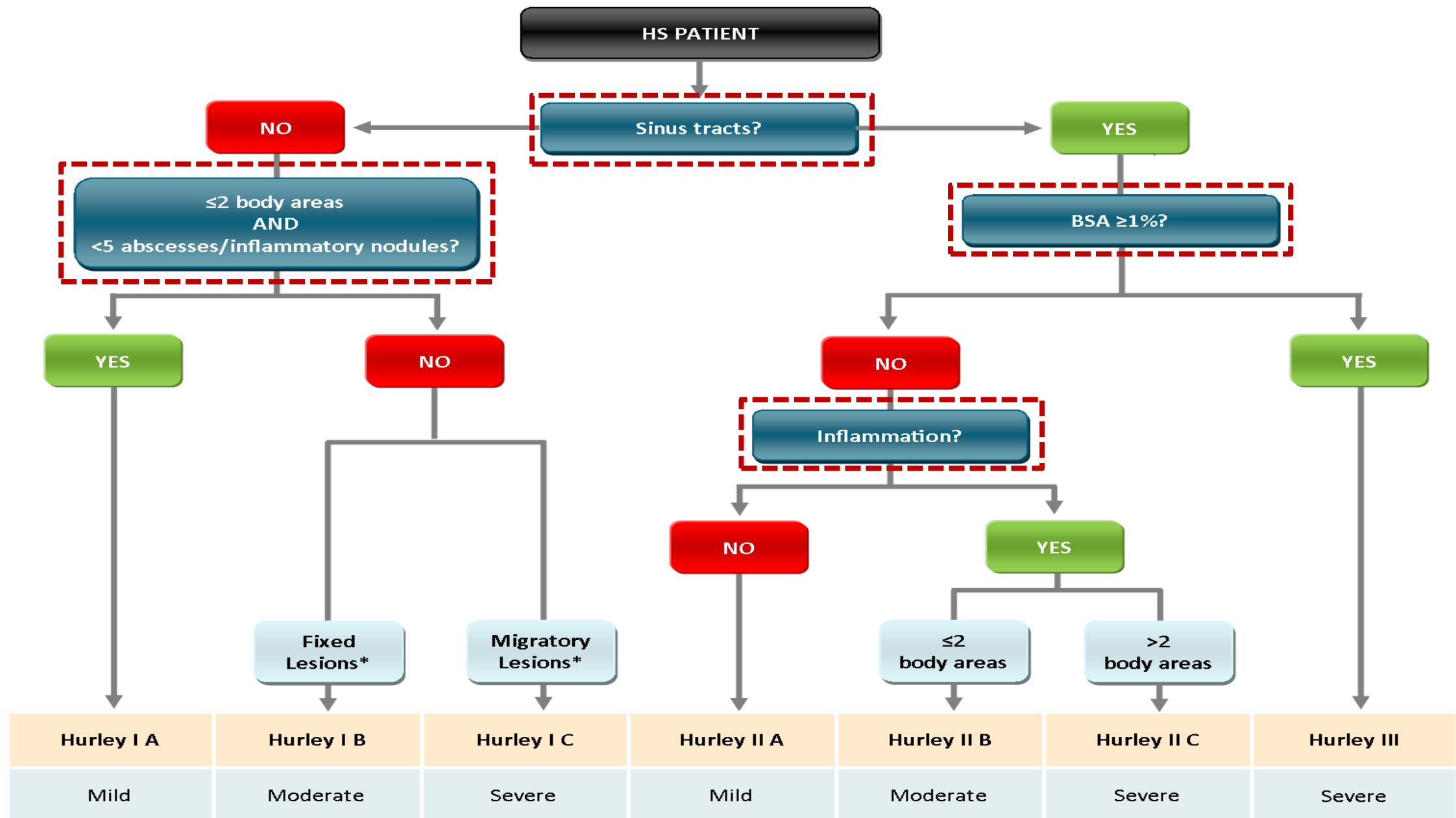
HS GUIDELINESS: SURGERY

(b)



ANTI-INFLAMMATORY Treatment





HS: hidradenitis suppurativa. BSA: body surface area affected by HS. *Predominantly.

A: Mild

B: Moderate

C: Severe

Hurley I



1. Topical clindamycine*
2. Tetracyclines

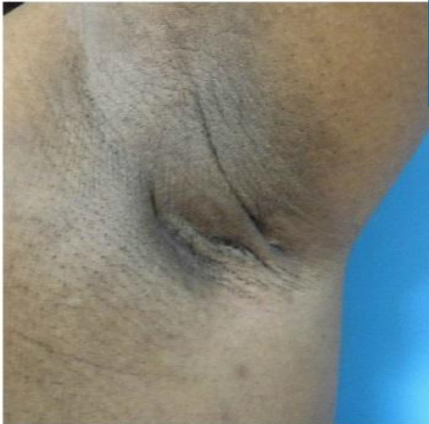


- Medical treatment in combination with surgery:
1. Topical clindamycine*
 2. Tetracyclines
 3. Clindamycine + Rifampicine



- Systemic medication:
1. Tetracyclines
 2. Clindamycine + Rifampicine
 3. Adalimumab
 4. Infliximab
 5. Acitretine
 6. other 2nd and 3rd line therapies**

Hurley II



1. Surgery:



- Systemic medication in combination with surgery:
1. Tetracyclines
 2. Clindamycin + Rifampicin



- Systemic medication in combination with surgery:
1. Tetracyclines
 2. Clindamycine + Rifampicine
 3. Adalimumab
 4. Infliximab
 5. Other 2nd and 3rd line therapies**

Hurley III



- Systemic medication in combination with surgery:
1. Clindamycine + Rifampicine
 2. Adalimumab
 3. Infliximab
 4. Other 2nd and 3rd line therapies**

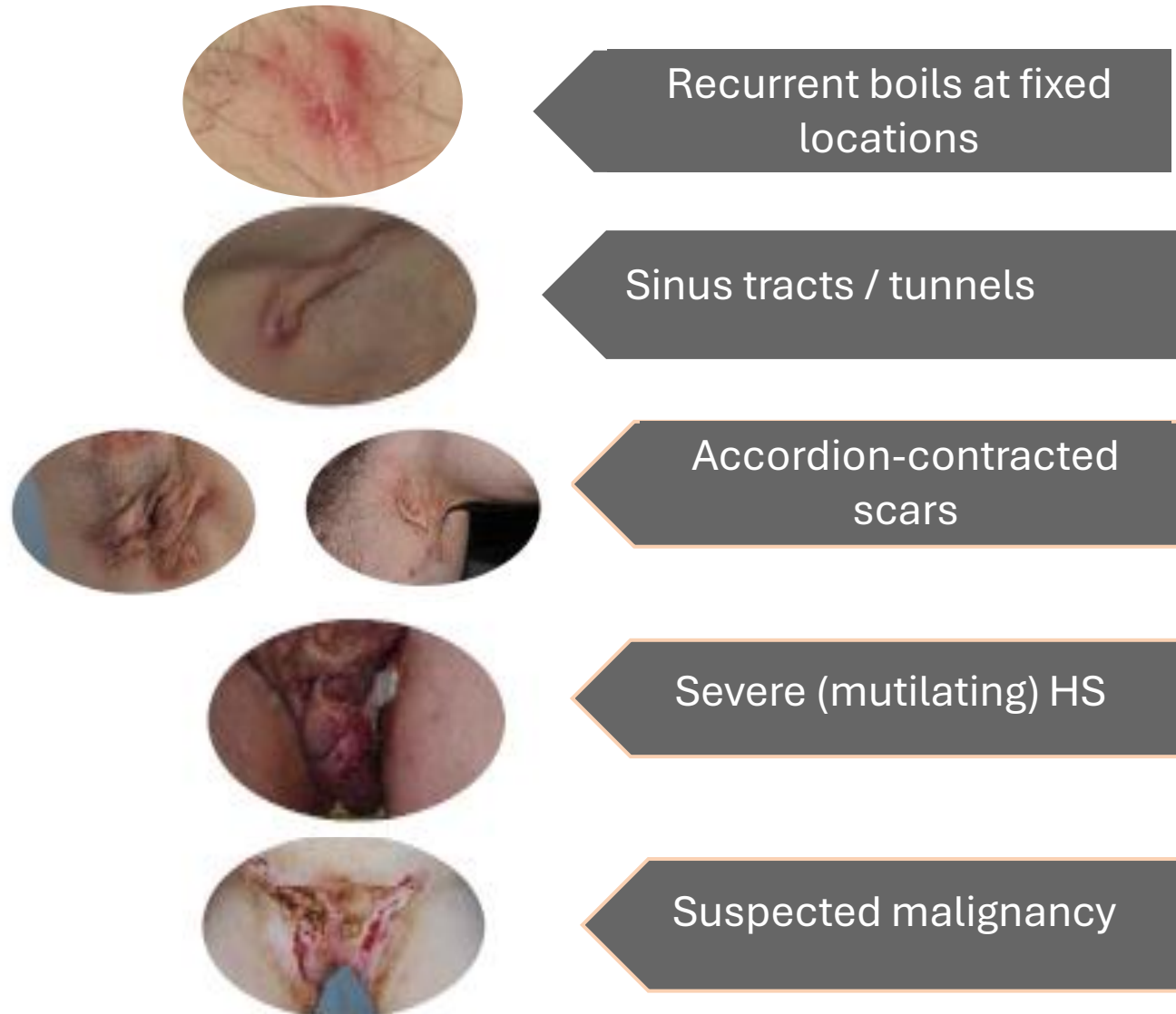
* < 3 months

** ustekinumab, anakinra, dapstone, cyclosporine

NOTE

- acute lesions can be treated with: topical resorcinol (TID) or intralesional corticosteroids
- abscesses can be treated with incision and drainage

Mandatory indications for surgery



Adalimumab + surgery = safe & effective

JAMA Surgery | Original Investigation

Efficacy and Safety of Adalimumab in Conjunction With Surgery in Moderate to Severe Hidradenitis Suppurativa: The SHARPS Randomized Clinical Trial

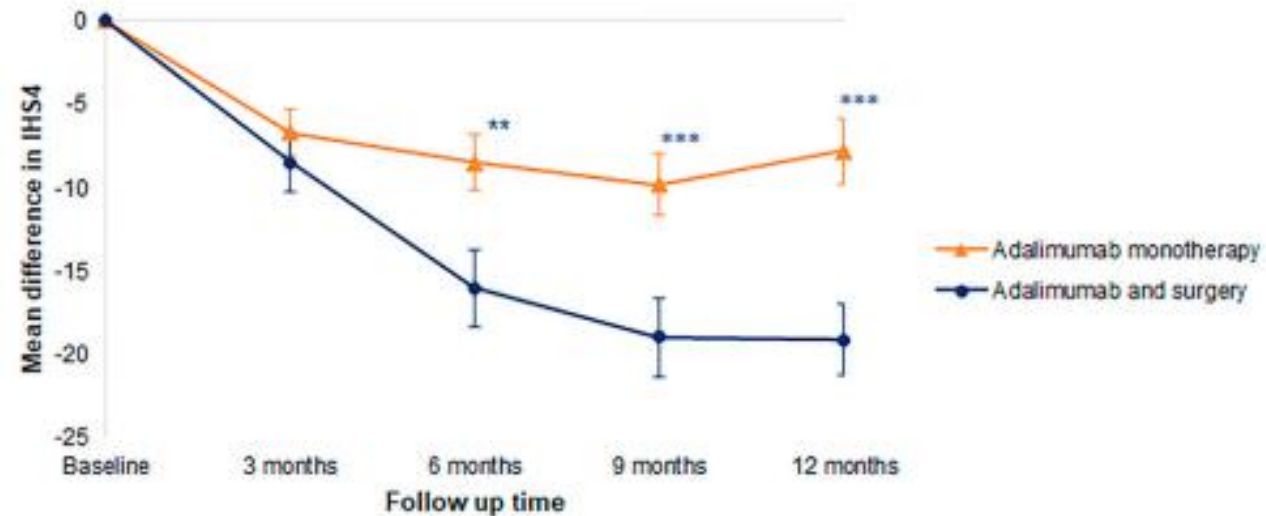
Falk G. Bechara, MD; Maurizio Podda, MD; Errol P. Prens, MD, PhD; Barbara Horváth, MD, PhD; Evangelos J. Giamarellos-Bourboulis, MD, PhD; Afsaneh Alavi, MSc, MD; Jacek C. Szepietowski, MD, PhD; Joslyn Kirby, MD, MS, MEd; Ziqian Geng, PhD; Christine Jean, PhD; Gregor B. E. Jemec, MD, DMSc; Christos C. Zouboulis, MD, PhD

Bechara et al. JAMA surg 2021
Aarts et al. JAAD 2023

ORIGINAL ARTICLES

Adalimumab in conjunction with surgery compared with adalimumab monotherapy for hidradenitis suppurativa: A Randomized Controlled Trial in a real-world setting

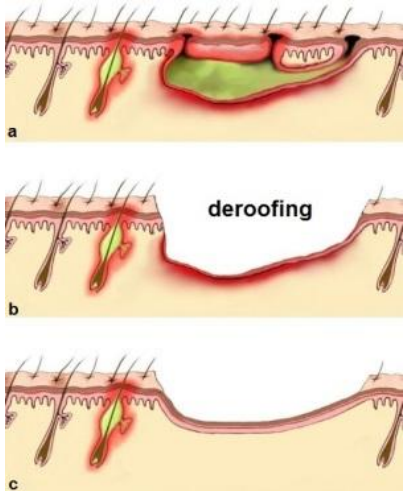
Pim Aarts, MD, Johanna C. van Huijstee, MD, Hessel H. van der Zee, MD, PhD, Martijn B. A. van Doorn, MD, PhD, Kelsey R. van Straalen, MD, PhD, and Errol P. Prens, MD, PhD



Surgical procedures

Minor surgical procedures

Incision & drainage



Deroofing

Limited excision



Major surgical procedures

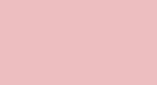
Wide excision




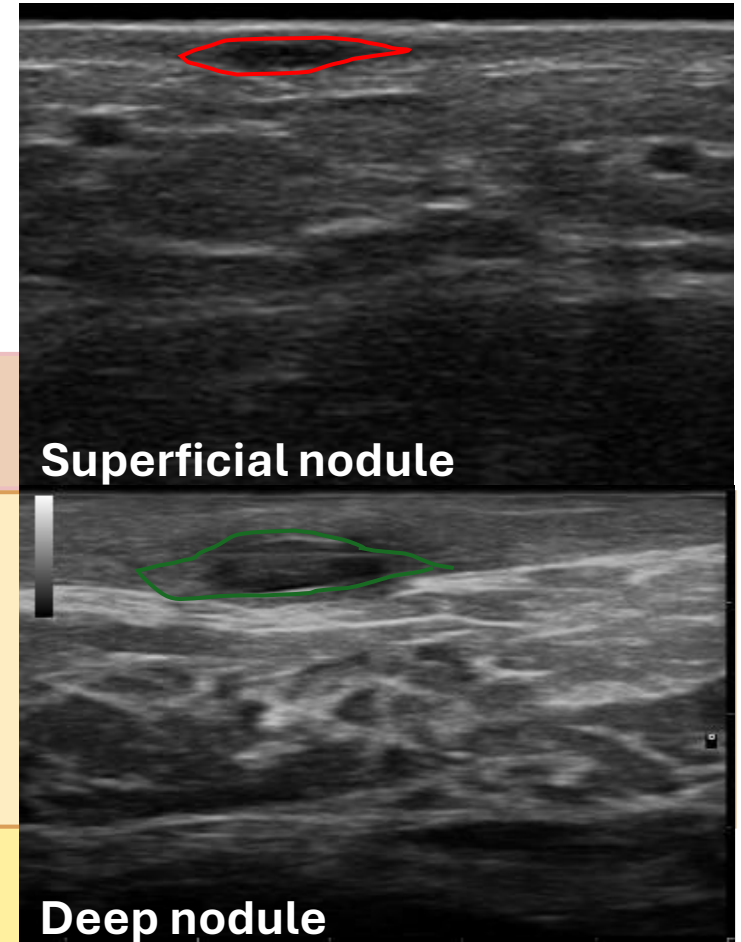
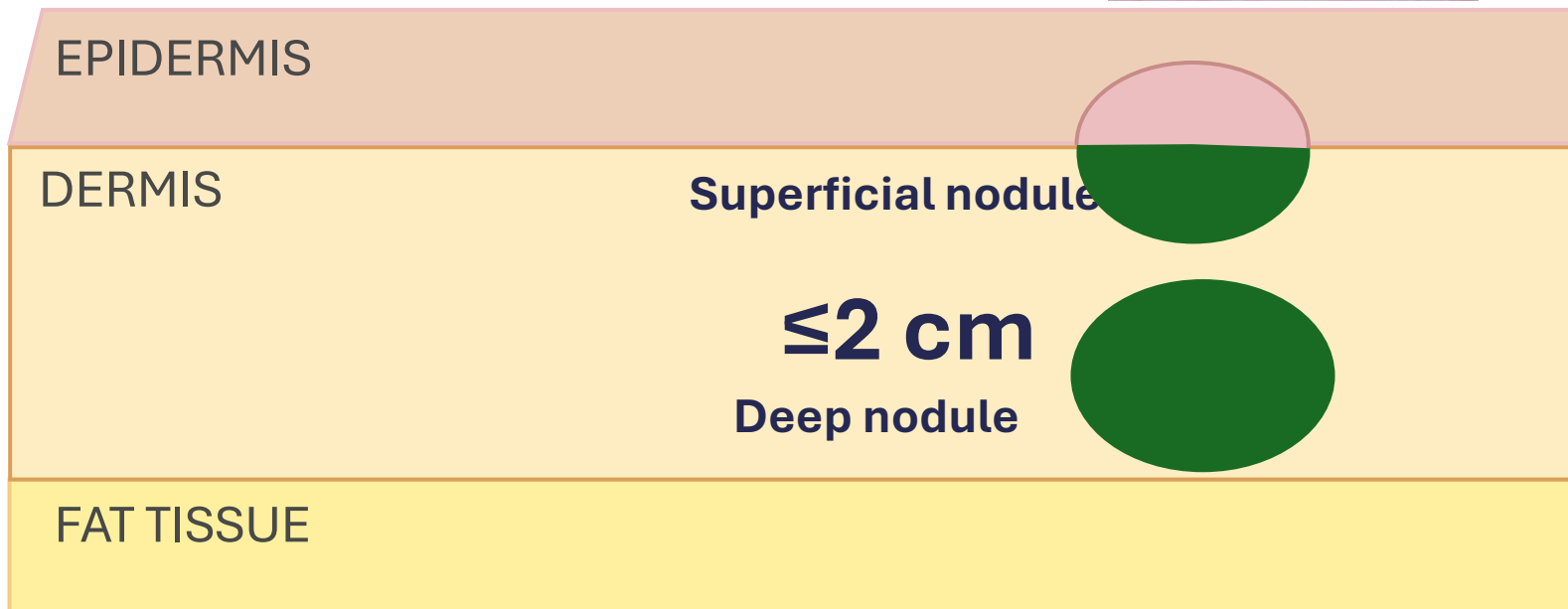
‘Doc, cut this all out’



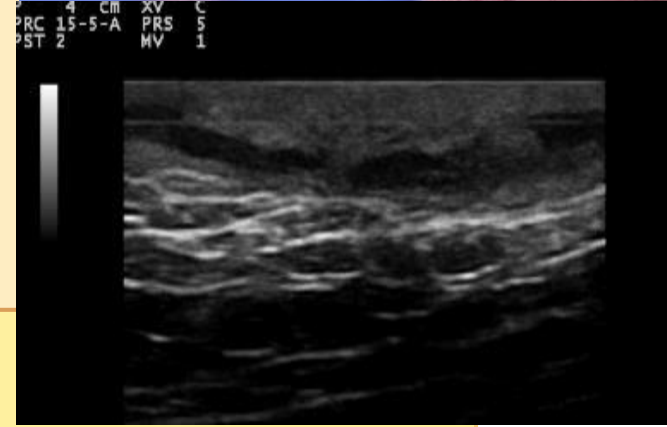
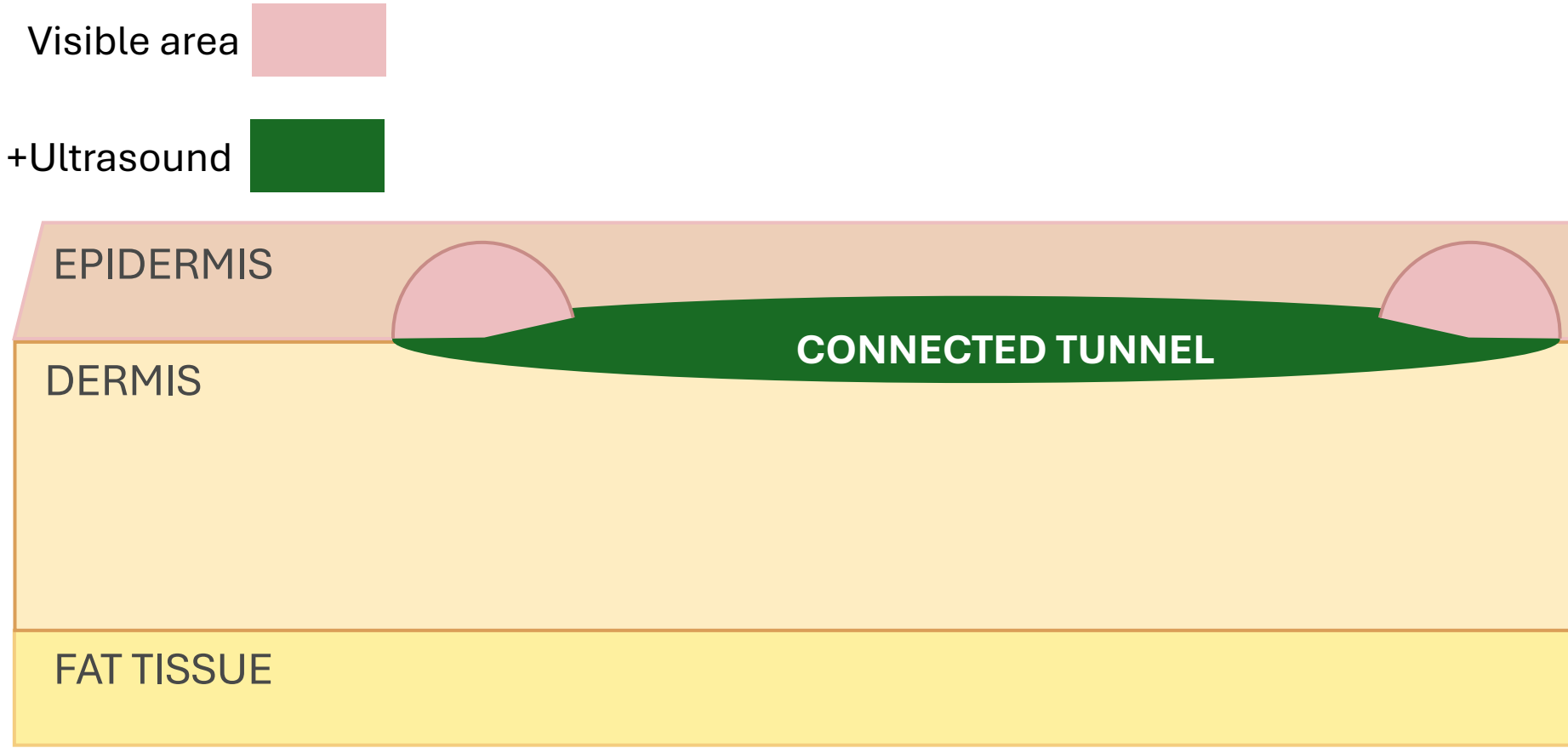
What occurs beneath the skin? HS lesions: lesions ≤ 2 cm

Visible area 

+Ultrasound 



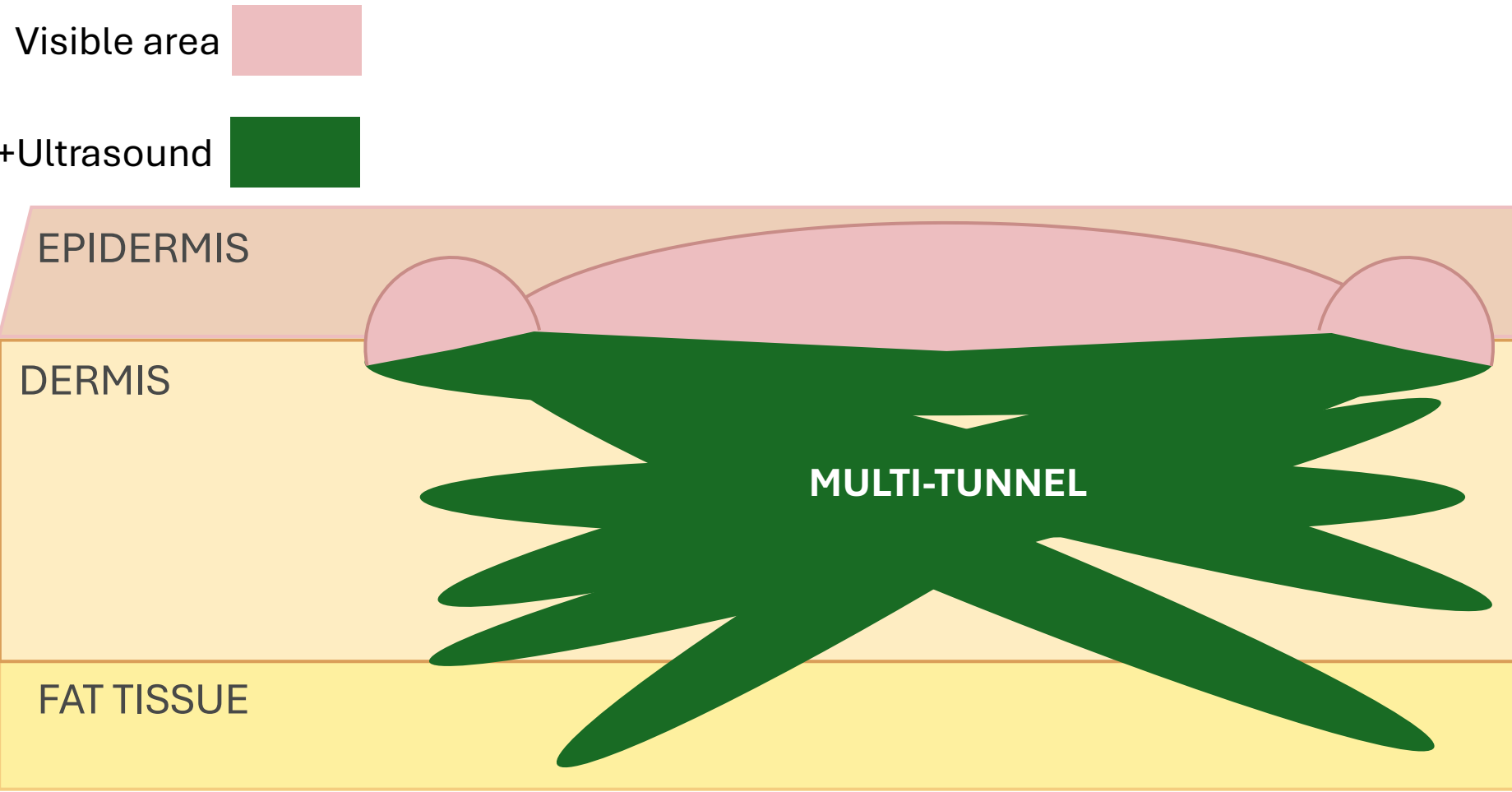
What occurs beneath the skin? connected HS lesions



Images courtesy of Dr Martorell

1. Zouboulis CC, et al. *Dermatology*. 2015;231:184–190; 2. Lipsker D, et al. *Dermatology*. 2016;232:137–142; 3. Martorell A, et al. *Dermatol Surg*. 2017

What occurs beneath the skin? HS lesions: multi-tunnels



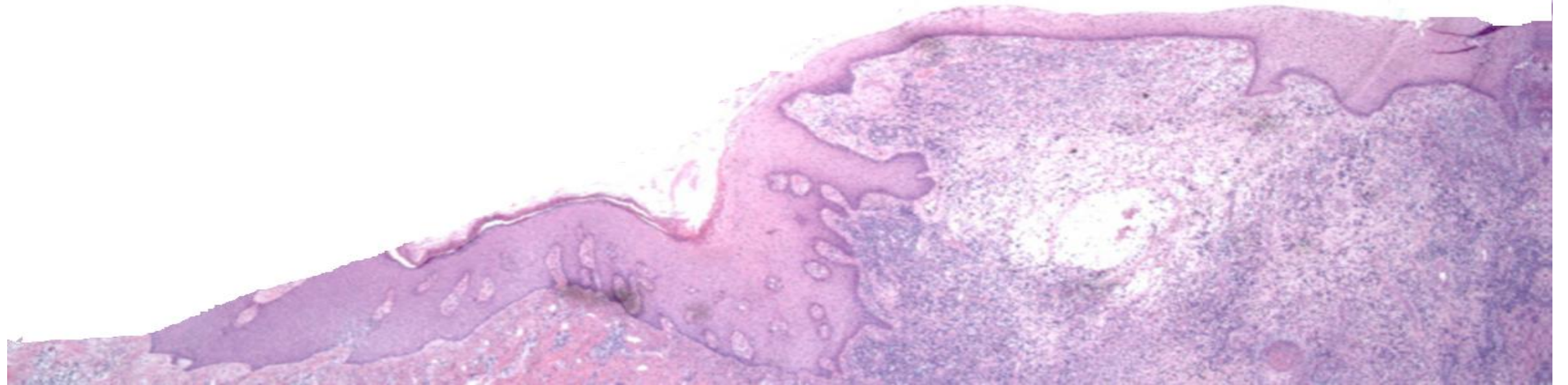
Images courtesy of Dr Martorell

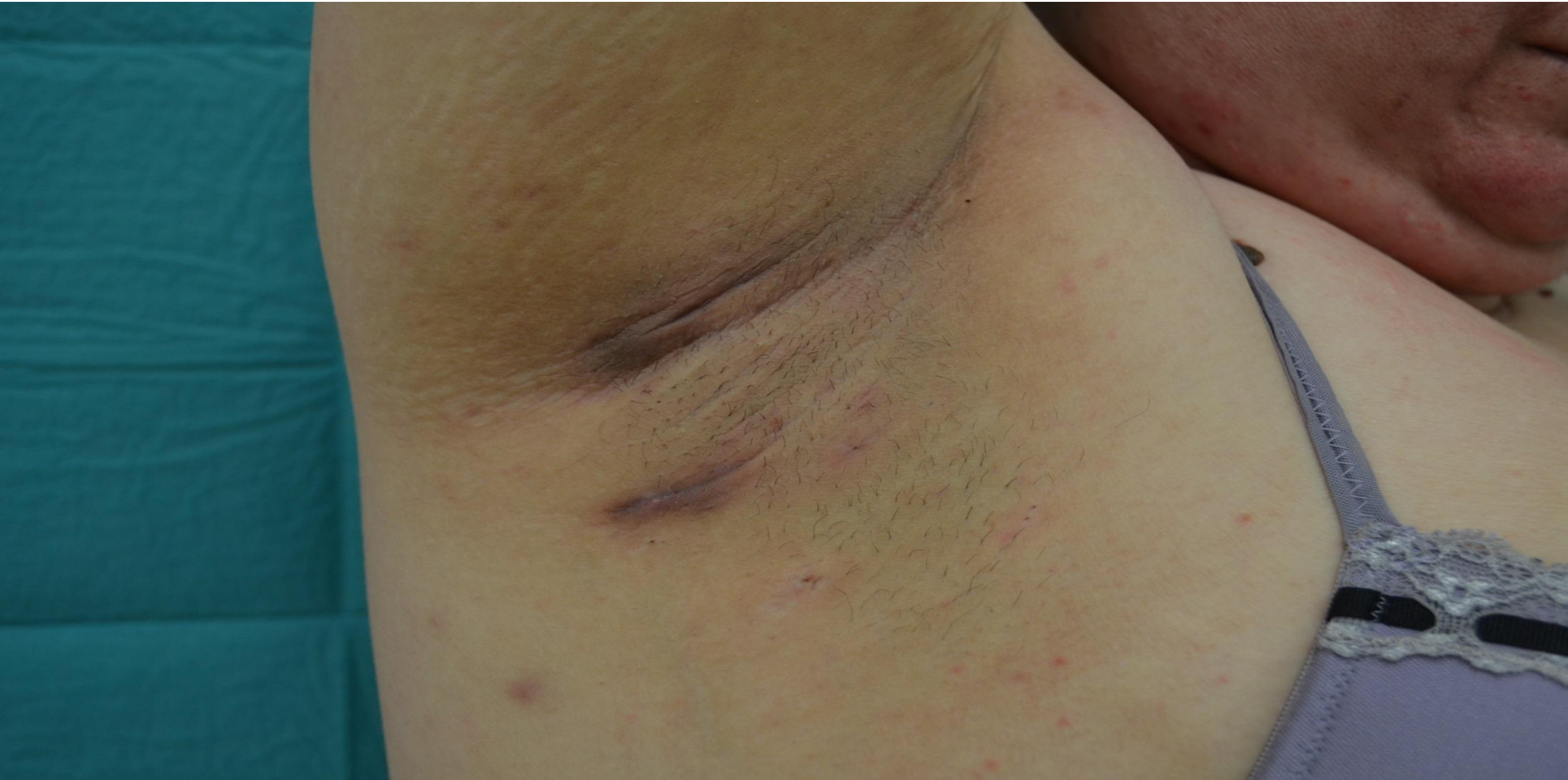
1. Zouboulis CC, et al. *Dermatology*. 2015;231:184–190; 2. Lipsker D, et al. *Dermatology*. 2016;232:137–142; 3. Martorell A, et al. *Dermatol Surg*. 2017

Considerations: minor surgical procedures

	Incision and drainage	Deroofing	Limited excision
Indication	Acute abscess	Sinus tracts in limited areas; Abscess	Recurrent boils at fixed locations; Sinus tracts in limited areas; Solitary contracted or accordion-like scars
Aim	Pain relief	Local remission	Local remission
Anaesthesia	Local anaesthesia Cryotherapy	Local anaesthesia	Local anaesthesia
Procedure	Cold steel Electrosurgery CO ₂ laser	Cold steel Electrosurgery CO ₂ laser	Cold steel Electrosurgery
Recurrence	100% recurrence ¹	27% recurrence ²	22% recurrence ²

1. Ritz et al. *Int J Colorectal Dis.* 1998;13:164-8; 2. Mehdizadeh A, et al. *J Am Acad Dermatol.* 2015;73(Suppl 5):S70–77.













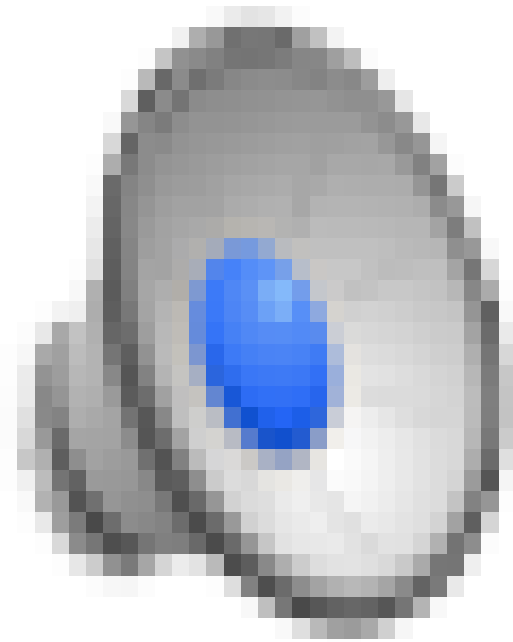
Before deroofing



After 3 years



Video deroofing



Probing the floor

limited excision left inguinal area
under general anaesthesia

Early results of excision



-

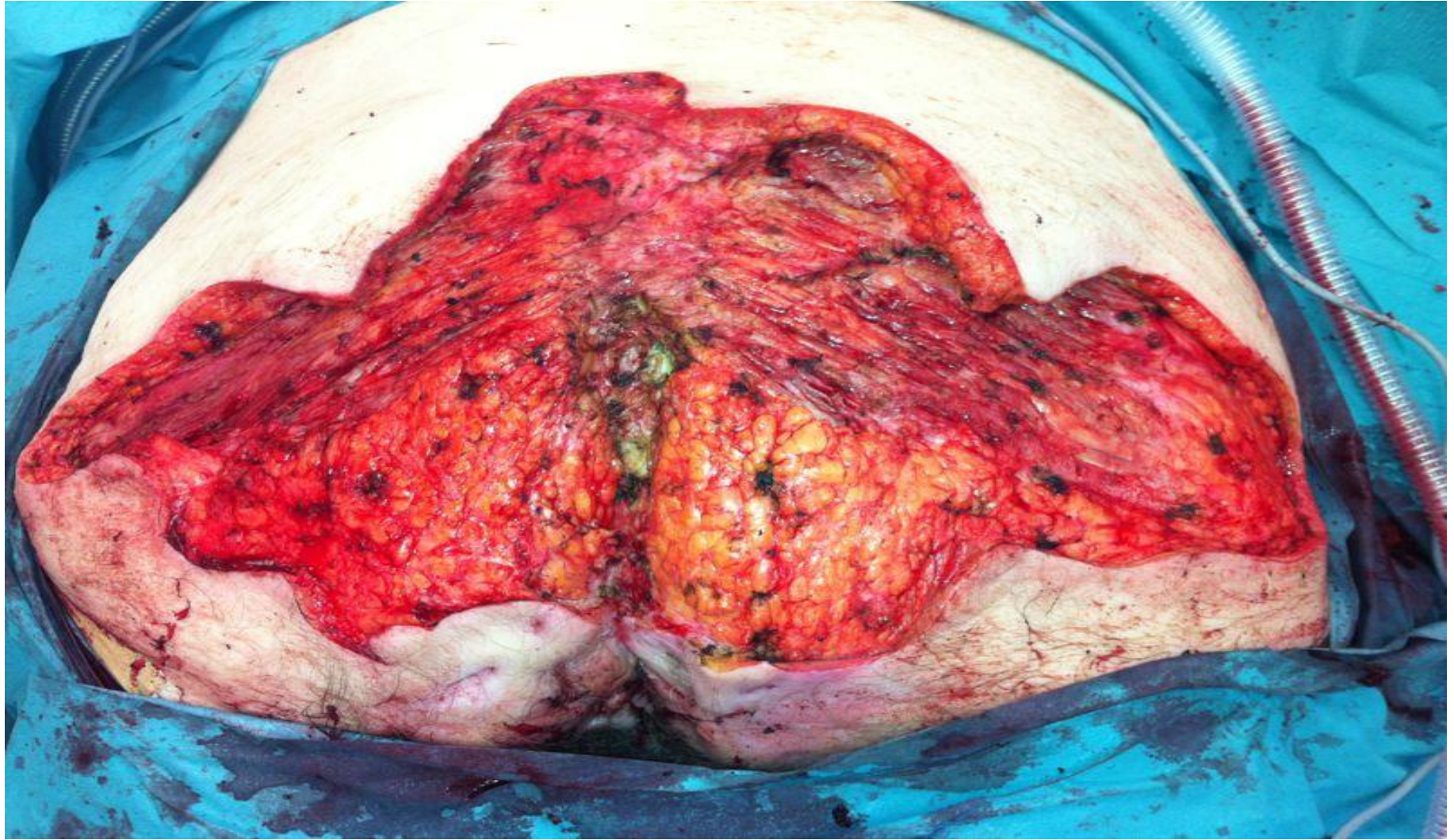
Surgery

+1 week

+4 weeks

Large radical excisions





Excision + SSG

