



Necrotizing Fasciitis in the Head and Neck: Our Institutional Experience

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Introduction

Necrotizing fasciitis of the head and neck is a rare life-threatening condition that is characterized by rapid progression of tissue necrosis due to aggressive and rapid bacterial spread. Necrotizing fasciitis most commonly occurs in the abdominal wall, perineum, and extremities, with lower frequency in the head and neck region (1-10% of all cases).¹ Significant morbidity and mortality can occur as a result of delayed diagnosis and treatment due to the aggressive nature of the soft tissue infection in this high-risk region. Necrotizing fasciitis is a clinical diagnosis where physical exam findings of overlying skin erythema, edema, crepitus and pain out of proportion are the most common diagnostic findings.² Here we review 10 cases of head and neck necrotizing fasciitis at an urban tertiary care center.

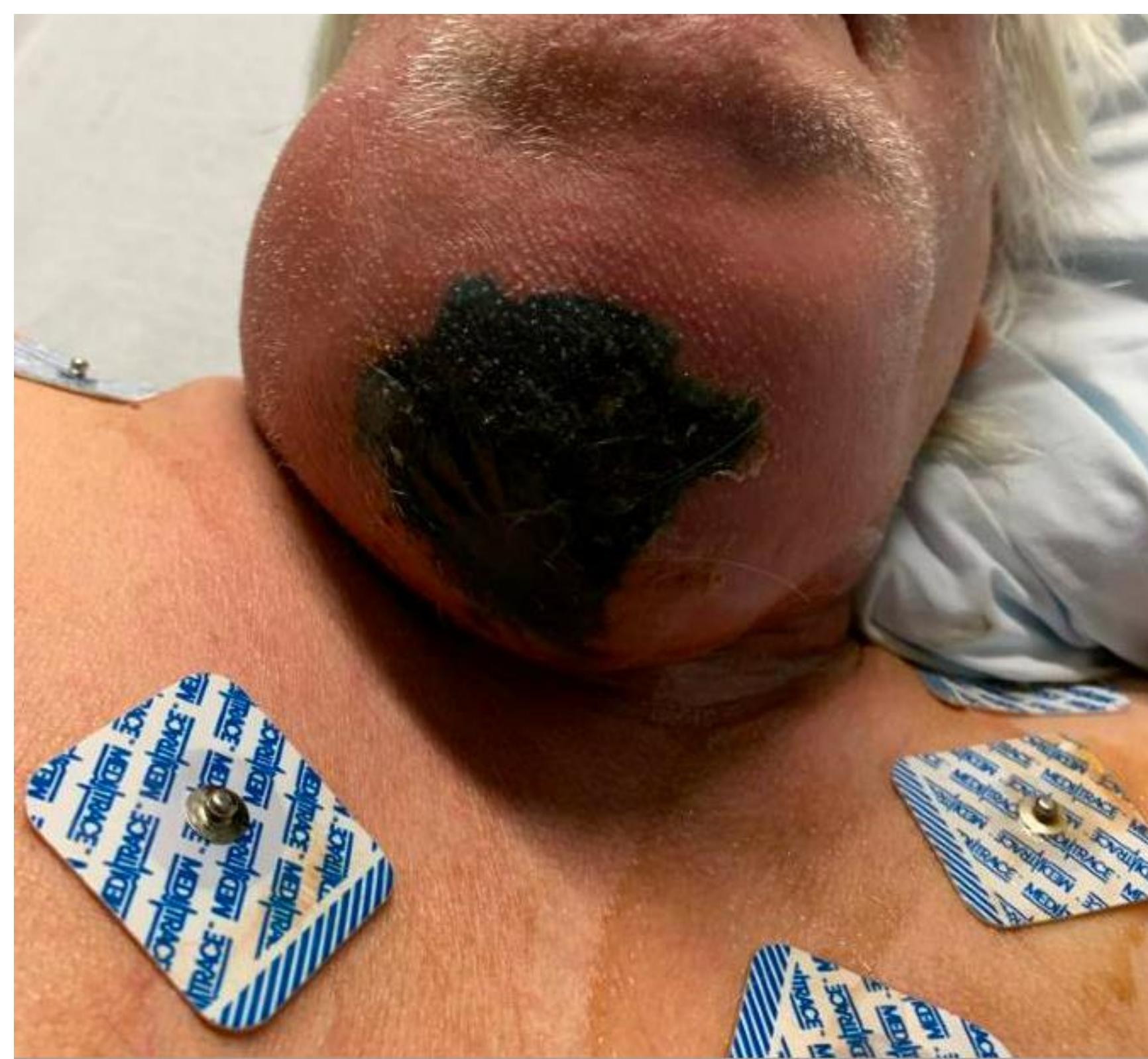


Figure 1: Patient #2 necrotizing sublingual, submental, and submandibular infection of odontogenic origin



Figure 4: Patient #5 (Left) necrotizing infection of the posterior neck before debridement (Right) neck wound after debridement



Figure 2: Patient #3 post debridement from necrotizing infection after presenting with epiglottitis



Figure 5: Patient #6 post debridement from unknown etiology



Figure 3: Patient #4 necrotizing anterior neck infection secondary to IV drug use

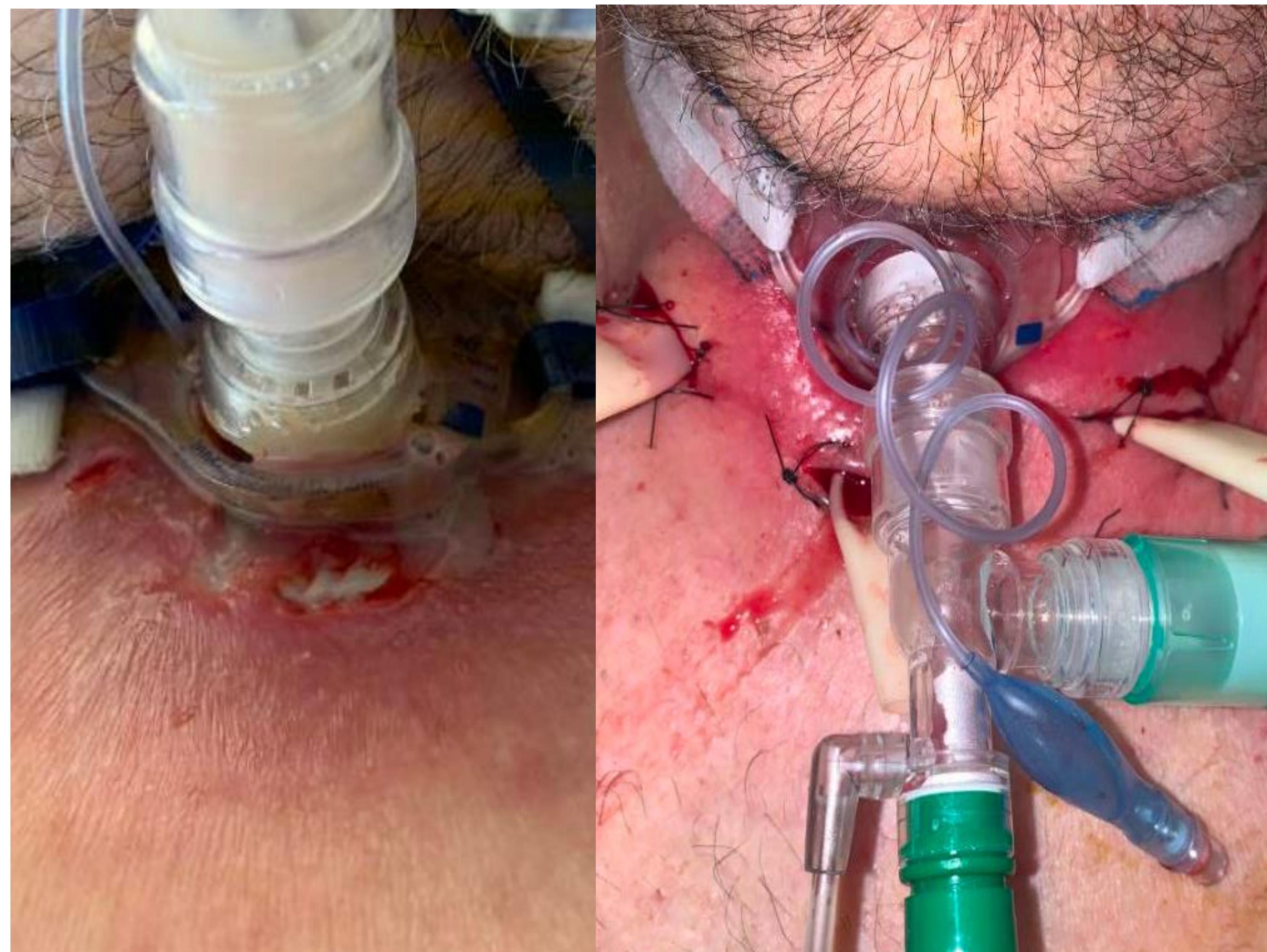
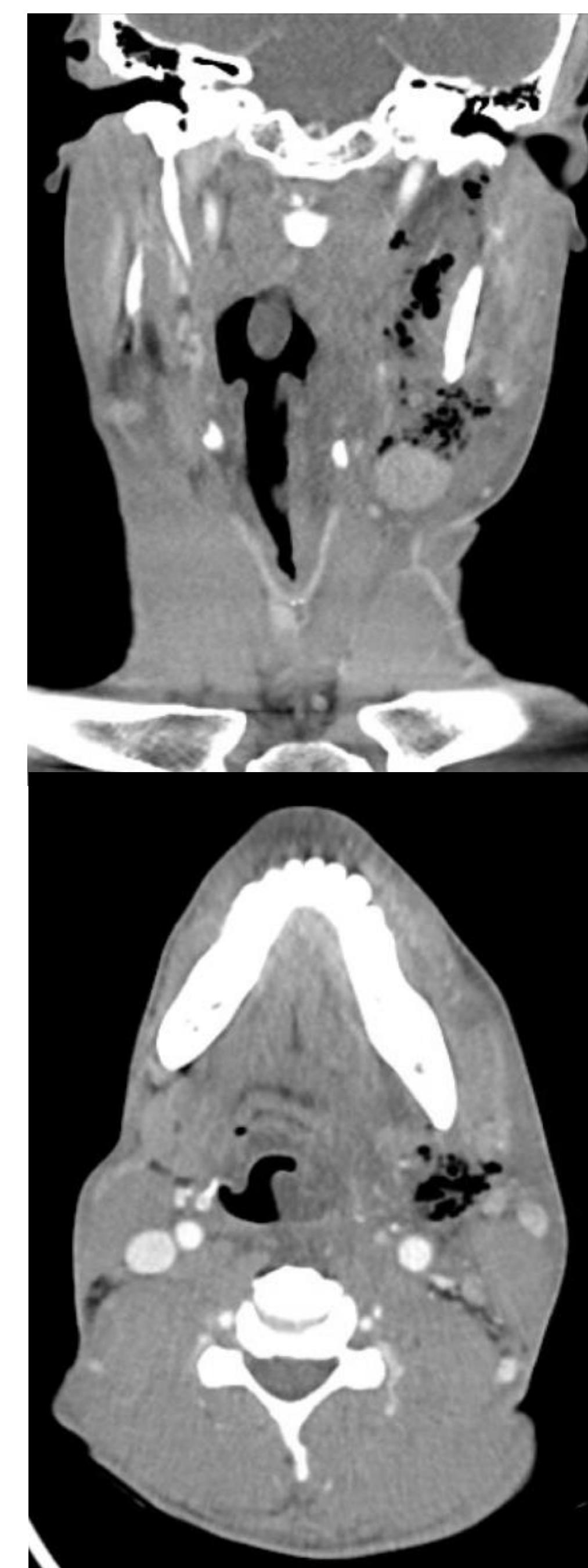
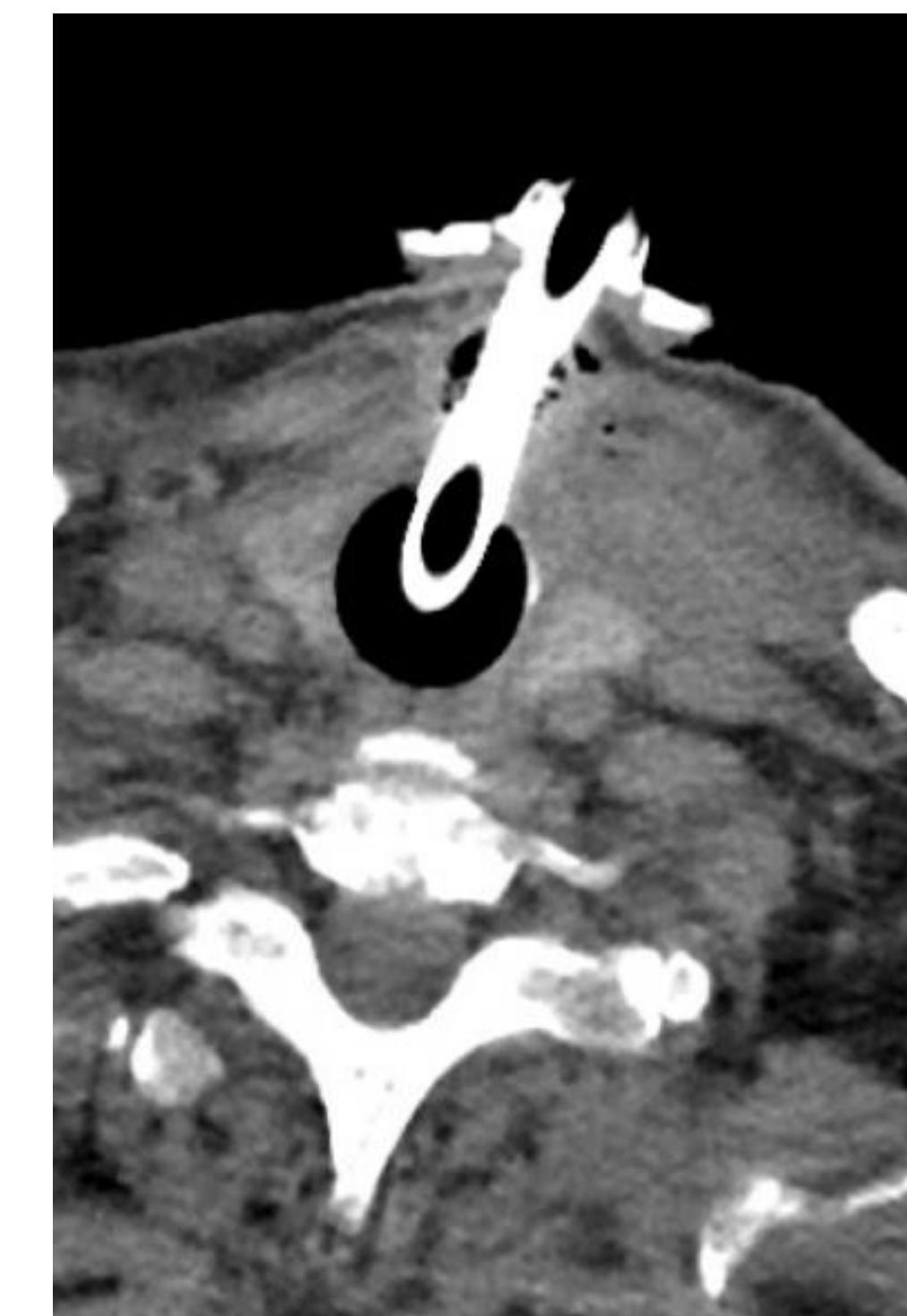


Figure 6: Patient #8 (Left) necrotizing infection of the posterior neck before debridement (Right) neck wound after debridement



Patient #10 Coronal and Axial CT neck with contrast demonstrating necrotizing infection of multiple left neck regions



Patient #8 CT neck without contrast demonstrating soft tissue liquefaction around tracheostomy stoma with gas extension into the left SCM

Table 1: Microbiology

Pathogen	Number of Patients
Gram positive cocci (GPC)	4
Streptococcus anginosus group (including constellatus)	4
Coagulase-negative staphylococci (CoNS)	4
Gram positive rods (GPR, including coryneform)	2
Gram negative rods (GNR)	2
Group A Streptococcus (GAS)	2
Normal respiratory flora	2
Bacteroides species (ovatus, thetaiotaomicron)	2
Candida albicans	1
Anaerobic gram positive cocci	1
Staphylococcus aureus	1
Escherichia coli	1
Group B Streptococcus (GBS)	1
Finegoldia magna	1
Facklamia hominis	1
Alpha hemolytic Streptococcus	1
Lactobacillus rhamnosus	1
Suspected anaerobes / nonviable organisms	1

Results:

Demographics

- 10 cases: age 26–80 (mean 58.2 ± 18.4); 6 males, 4 females
- Ethnicity: Caucasian (6/10), Black (2/10), Hispanic (1/10), Unknown (1/10)
- Risk factors: tobacco use (6/10), alcohol use (6/10), IV drug use (2/10)

Presentation

- Neck skin edema (9/10), pain (8/10), erythema (7/10), crepitus (6/10), skin discoloration (4/10), sepsis (3/10), hoarseness (2/10)
- Other: rash, dysphagia/odynophagia, sore throat, cough, SOB, muffled voice, drooling
- Labs: neutrophilia (10/10); leukocytosis (9/10)

Imaging

- CT performed (8/10) showing soft tissue edema, fluid collection, gas in fascial planes
- Involvement: submandibular, submental, sublingual, retropharyngeal, parapharyngeal spaces

Surgical Interventions

- All patients: abscess drainage + debridement; serial debridements (5/10)
- Additional: dental extractions (3/10), tracheostomy (1/10), skin grafting (1/10)
- Time to surgery: mean 27.4 hrs; (7/10) <24 hrs; others at 28, 48, 120 hrs

Microbiology

- Polymicrobial in most cases (aerobes + anaerobes)
- Common: *Streptococcus anginosus*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, and *Streptococcus constellatus*
- Fungal: *Candida albicans* (1/10)

Postoperative Course

- ICU stay (7/10), mean 19 ± 13.6 days (range 2–45)
- Complications: ARDS, AKI, sepsis, mediastinitis, thrombocytopenia

Most required multidisciplinary care

Mortality & Survival

- Survival (9/10; 90%)
- One inpatient death due to GI bleed
- Discharge: rehab (5/10), home (2/10), hospice (2/10); 1 AMA discharge

Conclusions

Patients with necrotizing fasciitis of the head and neck often have active co-morbidities requiring appropriate collaboration amongst multiple specialties. High index of suspicion and prompt diagnosis are essential in this aggressive subset of head and neck infections. Initiation of comprehensive treatment which includes administration of broad-spectrum antibiotics, sepsis treatment and early surgical intervention results in a high overall survival rate.

References

