



## Necrotising Fasciitis Of Neck With Favorable Outcome

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### Abstract

#### Introduction

Necrotising fasciitis is an aggressive infection of skin and soft tissue . Cervical necrotising fasciitis is rare but is associated with high mortality and morbidity if not diagnosed in early stages. Prompt intervention with appropriate antibiotics and early surgery for debridement of necrotic tissues leads to good results. Establishing a definitive airway early in the course of the disease is of equal importance.

#### Conclusion

Cervical necrotising fasciitis is a rare but life-threatening soft tissue infection which presents in an indolent fashion. A high index of clinical suspicion is required for timely diagnosis. Early identification of the disease and aggressive surgical debridement along with antibiotics is the mainstay of treatment which results in good outcome.

**Keywords:** Cervical necrotising fasciitis , Surgical debridement

#### Introduction

Necrotising fasciitis is a fulminant skin and soft tissue infection which involves fascial plane and subcutaneous tissues and causes liquefaction necrosis. It spreads along the fascial plane which has poor blood supply, so that in the initial stages the overlying skin is spared which often delays the diagnosis. Cervical necrotising fasciitis is rare and usually arises from an odontogenic or pharyngeal infection. But in some cases a clear site of origin is not identified. The organisms involved can be polymicrobial or monomicrobial. Most common

organism isolated are beta hemolytic streptococcus and staphylococcus aureus. Gram negative and anaerobic bacteria may also be involved. Risk factors for developing necrotising fasciitis are diabetes, alcoholism, malnutrition, immunosuppression and advanced age. Diagnosis is based on clinical examination as well as imaging. Plain radiograph identifies gas in soft tissue. Computed tomography more sensitive than plain radiograph in diagnosing necrotising fasciitis.

The first step in treatment is securing an airway which is often challenging as any neck swelling is a potentially difficult airway. So tracheostomy is often required. Surgical debridement is the cornerstone of treatment. Multiple debridements might be necessary for the removal of dead and necrotic tissues along with broad-spectrum intravenous antibiotics and good supportive care. Cervical necrotising fasciitis is associated with high morbidity and mortality. Herein we report a case of cervical necrotising with good outcome.

### Case Report

A 59 year gentleman a known diabetic since 22 years was brought to our hospital with complaints of fever, throat pain and neck swelling which was progressively increasing in size of 1 week duration, associated with dysphagia and dysphonia. He was initially treated symptomatically from nearby hospital. Due to worsening of his symptoms he was brought to our hospital. On examination he was conscious oriented. His respiratory rate was 24 per minute saturation was 95% in room air. He was dyspnoeic and was unable to lay supine. His heart rate was 84/min and blood pressure was 140/80. On local examination he had firm anterior diffuse neck swelling extending from below the mandible to bilateral clavicle with erythematous overlying skin. Oral cavity was normal. On examination of throat there was diffuse mucosal edema with pooling of saliva. His total count was 11,490, CRP was 398.3, PCT was 7.0. His HbA1c value was greater than 14. He was clinically in sepsis. He was started on intravenous antibiotics. His arterial blood gas was normal. CT neck was suggestive of cellulitis with abscess extending to prevertebral space extending to the mediastinum. In view of impending airway compromise and for source he was taken for neck exploration and emergency drainage of neck abscess. Intraoperatively there was diffuse edema of posterior pharyngeal wall and left side of epiglottis. Purulent foul smelling discharge about 30 CC was drained from the inter muscular plane anterior to the thyroid gland, lateral and superficial to the muscular plane in the submental and submandibular area. Postoperatively his blood sugars were controlled with insulin infusion. Daily wound dressing was given. Clinically patient became better, there was decrease in size of neck swelling and his sepsis markers also came down. Pus culture and sensitivity was sterile.

On post operative day 3, he went into cardiac arrest and was revived after one cycle of cardiopulmonary resuscitation. Mechanical ventilation was continued. Echocardiography taken was suggestive of stress cardiomyopathy with ejection fraction of 43%. Patient developed progressive increase in size of neck swelling. MRI neck was taken which showed increase in size of abscess and extension of abscess into all the neck spaces. Intravenous antibiotics were stepped up and he was taken up for re-exploration of neck on day 10 of ICU stay. Dead and necrotic tissues were removed and tracheostomy was done and neck wound was kept open. Daily wound debridement and dressing was done. His sepsis markers came negative and he was clinically improving. He was slowly weaned of ventilator. His wound was healing well indicating signs of recovery. Repeat echocardiography showed improvement in ejection fraction to 63%. With good nutrition, physiotherapy and other supportive care patient improved dramatically. Hence he was shifted to room in a stable condition. At present he is clinically stable, his wound is healing well and is being planned for decannulation.

### Discussion

Necrotising fasciitis is a necrotising infection which involves fascia and subcutaneous tissues and causes liquefaction necrosis. It spreads along the fascial plane which has poor blood supply, sparing the muscle which has good blood supply. In the initial stages the overlying skin is spared which masks the infection and delays the diagnosis. Most common sites involved are the extremities perineum and abdomen (1). Patients can present with features of systemic toxicity and sepsis. Wang et al. have described a clinical triad in cervical necrotising fasciitis. Necrotising fasciitis presents with a triad of local pain, swelling, and erythema (stage 1), followed by blistering and bullae (stage 2), and crepitus, skin anesthesia, and necrosis (stage 3) (2). The mortality rate in cervical necrotising fasciitis range from 5% to 40%. (3) Hence timely diagnosis and early initiation of treatment is of utmost importance.

In this case the patient presented within a few days of onset of symptoms. Even though the site of involvement that is, cervical area was not a common site timely diagnosis could be made based on typical history that is fever, pain and neck swelling. In

addition early imaging with computed tomography also added up. Computed tomography identifies fascial thickening, edema, subcutaneous gas and abscess and is more sensitive than plain radiograph. MRI has 100% sensitivity but it may not show early cases of fascial involvement of necrotizing fasciitis (4). The patient had uncontrolled diabetes mellitus as indicated by high HbA1c value (>14) which was point in favor of the diagnosis.

Cervical necrotising fasciitis usually arises from an odontogenic or pharyngeal infection. In our case a clear source could not be identified- the source could probably be pharyngeal or hematogenous. The infection is usually polymicrobial in people with comorbidities and the most common organism isolated are beta hemolytic *Streptococcus* and *staphylococcus aureus*. Gram negative bacteria and anaerobic may also be involved. No organism was isolated in the above case, probably because the patient was already on oral antibiotics.

The first step in treatment in cervical necrotising fasciitis is securing an airway which is often challenging as any neck swelling is a potentially difficult airway. So tracheostomy is often required. Source control by surgical debridement is the cornerstone of treatment. Multiple debridements might be necessary along with broad-spectrum intravenous antibiotics. Achieving euglycemia is another important aspect. Our patient required a tracheostomy and multiple debridements. With excellent supportive care patient had a good recovery.

## Conclusion

Clinicians should have a high index of suspicion in any patient presenting with neck swelling and features of septicemia especially with immunocompromised status. Early recognition of the condition and prompt treatment lead to excellent outcomes.

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