Extensive Necrotizing Fasciitis of Face Secondary to Streptococcus Anginosus

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Background:
• Cervicofacial Necrotizing Fasciitis (CNF) is a rare and life threatening infection.
• It carries significant morbidity and mortality despite intensive treatment, with mortality rate exceeding 30%.
• Reports in the literature of CNF secondary to dental infections are very few.
• We report a case of an 82 year old female with extensive CNF secondary to Streptococcus Anginosus due to multiple dental extractions.

Case Description:
• 82 year old female with no significant PMH presented to the ER with severe left facial pain and swelling.
• Two weeks ago patient had multiple dental extractions after which she developed pain and swelling at the same site.
• Was seen in urgent care and prescribed oral amoxicillin.
• Two days later she presented to the emergency department with:
  • fever, sore throat, difficulty swallowing, hoarseness of voice, trismus and inability to eat.
• Review of systems was otherwise negative.

Physical Examination:
• Vital signs: BP 108/72 mmHg; RR 20/min; Tamp 100.7°F; Pulse Ox 95% on RA.
• General: Toxic looking. No stridor.
• Head and neck:
  • Large tender fluctuant left facial and mandibular swelling extending to left parotid and left side of the neck with mottling of overlying skin.
  • Dry mucous membranes and poor dentition.
• Subcutaneous air was noted around the mandible and tracking inferiorly to the left supraclavicular region.
• No evidence of pneumomediastinum or mediastinitis.
• Review of systems was otherwise negative.

Laboratory Data:
• WBCs: 20.3 K/mcL (N 0.2 – 11.0)
• ANC: 17.5 K/mcL (N 1.8 – 7.7)
• Glucose: 198 mg/dl
• Hb: 11.0 g/dL (N 12.0 – 15.5)
• K 3.1 mmol/L (N 3.4 – 5.1)
• Creatinine: 1.6 mg/dl (N 0.50 – 1.10)
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• Urinalysis showed no proteinuria or hematuria.
• Liver function tests were within normal limits.

Microbiology:
• Blood cultures were negative.
• Antibiotics de-escalated to Unasyn and Clindamycin.
• Patient continued to have profuse purulent drainage and persistent leukocytosis.
• Repeat CT scan revealed multiple residual abscesses in the neck with pharyngeocutaneous fistula.
• Patient underwent repeated incision and drainage (x2).
• After completing 32 days of IV antibiotics, the extensive necrotizing fasciitis was successfully treated.

Imaging:
• CT scan of the neck and chest WO contrast:
  • Extensive left masseteric and parapharyngeal gas with phlegmon noted within multiple deep spaces of the neck and in the sublingual space.
• Subcutaneous air was noted around the mandible and tracking inferiorly to the left supraclavicular region.

Clinical Course:
• Patient was started empirically on Clindamycin, Cefepime and surgical drain placed.
• Patient was placed for airway protection and admitted to ICU.
• Large amount of foul smelling discharge and gas was encountered during the procedure.
• Patient underwent incision and drainage of left masseteric and parapharyngeal space abscess.
• Patient was also started on hyperbaric oxygen treatment.
• Wound cultures grew Streptococcus Anginosus and mixed anaerobic oral flora.
• A repeat CT scan revealed multiple residual abscesses in the neck after initial procedures showing complete resolution.

Microbiology:
• Gram stain showing Streptococcus Anginosus.

Discussion:
• Unlike other Viridans Streptococci, S. Anginosus group exhibits specific virulence factors that enable it to cause invasive pyogenic processes.
• Infections can range from minor pharyngitis to life threatening invasive infections of head, neck and CNS resulting in airway obstruction and sepsis as occurred in our case.
• Predisposing factors for facial NF are immune suppression and local factors like dental problems.
• Poor prognostic factors include old age, female sex and delayed surgical intervention.
• Infections caused by S. Anginosus could be treated with Beta-lactam agents along with early surgical intervention which is very crucial.
• Recent studies suggests hyperbaric oxygen therapy and IV immunoglobulin G as adjunctive therapy to improve surgical outcomes and reduce mortality.

Conclusion:
• Although Cervicofacial Necrotizing Fasciitis is rare, physicians must maintain a high index of suspicion in any patient presenting after a dental infection with rapid progression of swelling and a disproportionate amount of pain that is unresponsive to antibiotics.

References: