MEDIASTINITIS FOLLOWING DEEP NECK INFECTIONS: A THERAPEUTIC CHALLENGE

Naresh K. Panda1  S. B. S. Mann1,  S. C. Sharma1

ABSTRACT: Objective: To emphasize the salient features of surgical management of mediastinitis occurring secondary to deep neck infections.

Study design: Case series. Retrospective analysis

Setting: Institutional teaching department

Patients: Four consecutive cases of mediastinal abscess treated between 1990 and 1996. Selection criteria were presence of deep neck infection, radiological evidence of widening of mediastinum and confirmation of mediastinal infection at surgery. Computed tomography of neck and thorax was done in one case to document the extent of abscess.

Surgical management: All the patients underwent transcervical drainage of neck abscess and superior mediastinotomy. The involved spaces in the neck and mediastinum were irrigated with betadine antiseptic solution and negative suction drains put in the superior mediastinum to facilitate continuous drainage of the mediastinum. One patient required intercostal chest drainage for associated empyema. Tracheostomy was done in all the patients.

Results: All the patients survived and discharged after a hospital stay of around three weeks.

Conclusions: Mediastinal complication of deep neck infections can be alarming rapidly and can be effectively managed by early recognition and aggressive surgical drainage combined with antibiotic therapy after appropriate aerobic and anaerobic cultures.

Key Words: mediastinal abscess, cervical mediastinotomy, anaerobic infection.

INTRODUCTION

Mediastinal infection secondary to deep neck infections is a challenging clinical problem. Even in the post antibiotic era the mortality rate is approximately 40% (Estera AS et al. 1983). These infections are often mismanaged due to a tendency to underestimate the severity and extent of disease. Prevention of progression of the infectious process is clearly the goal of intervention. Unfortunately some patients continue to present with advanced complicated situations that try the capabilities of even the most experienced surgeon. Surgical drainage with appropriate antibiotic therapy is the mainstay of treatment in mediastinitis. However the surgical access to these infections still remains a matter of debate. In this report, we have attempted to outline our approach in managing the cases of mediastinitis secondary to deep neck infections.

CASE REPORTS

Case 1
R.K. a 24 years old male patient was admitted with complains of painful swallowing and a swelling in the left neck. Examination revealed a lethargic man with fullness and tenderness of his left neck. Oral cavity examination revealed a retropharyngeal abscess extending down. Radiographs of the neck and chest confirmed presence of a retropharyngeal abscess with extension into mediastinum. Incision and drainage of the abscess was done through the neck. At drainage a large quantity of brown foul smelling pus exuded from the cavity. A negative suction drain was put. An elective tracheostomy was also performed. Cultures of pus revealed presence of beta haemolytic streptococci sensitive to erythromycin and amoxycillin.

Case 2
A.S a middle aged male patient presented with history of fever, pain throat along with progressive dysphagia of ten days duration. There was no history of any instrumentation or any foreign body ingestion. Examination of this patient revealed a bulge in the posterior pharyngeal wall extending from lower border of soft palate to the hypopharynx. Neck

1Associate Professor, 2Professor and Head, 3Additional Professor, Department of Otolaryngology, Postgraduate Institute of Medical Education and Research, Chandigarh (India).
Mediastinitis Following Deep Neck Infections: A Therapeutic Challenge

Fig. I: X-ray soft tissue neck showing air dissection in retropharyngeal abscess.

examination showed crepitus on both sides of neck extending up to 2 cm below the sternal notch. A soft tissue X-ray of the neck showed widening of prevertebral space with gaseous dissection of soft tissues. (Fig. I) X-ray chest showed superior mediastinal widening with bilateral pleural effusion. Intercostal chest drainage on both sides resulted in aspiration of around 1000 cc of purulent fluid. A diagnosis of retropharyngeal abscess with superior mediastinitis was made. The patient was taken up for transcervical drainage of retropharyngeal abscess with superior mediastinotomy after performing an elective tracheotomy. Around 100 cc of yellowish pus mixed with air bubbles was drained. Anaerobic cultures of the pus revealed growth of anaerobic bacteria. Concentration smear did not show any acid-fast bacillus. The patient was put on parenteral antibiotics (Penicillin, Gentamycin, and Metronidazole). He was finally decannulated three weeks after surgical drainage and discharged.

Case 3
SS, a thirty-two year old male presented with a discharging sinus in the submandibular region on the right side following incision and drainage in the same area fifteen days back. At admission, patient had a fluctuant swelling in the submandibular region extending down to the neck. Oral cavity examination revealed a bulge of the soft palate with tonsil being pushed medially and an associated bulge in the posterior pharyngeal wall. Neck examination showed widening of superior mediastinum. A diagnosis of parapharyngeal space infection with mediastinal extension was entertained. The patient was taken up for exploration of the neck and drainage of pus from submandibular space, parapharyngeal space, retropharyngeal space and the superior mediastinum. Subsequently a negative suction drain was kept in the mediastinum. An elective tracheotomy was then done at this stage. The neck wound was closed in one layer in a loose fashion. Ryle’s tube was inserted for feeding purpose. Culture of the pus showed Pseudomonas aeruginosa sensitive to ciprofloxacin and Gentamycin. Patient made an uneventful recovery postoperatively. The drain was removed after 10 days. Patient was finally decannulated on the seventeenth day and discharged.

Case 4
SS a forty five-year-old male presented with history of fever, pain, dysphagia and swelling in the neck. There was no history of tooth extraction, recent upper respiratory catarrh or any penetrating injury. Examination of the neck showed a diffuse swelling on the right side up to the lower part of neck. Oral cavity examination showed a bulge in the lateral pharyngeal wall and retropharyngeal space. The uvula and tonsils were pushed to the opposite side. A soft tissue neck radiograph demonstrated a marked widening of the prevertebral soft tissues. A preliminary radiograph of the chest showed widening of the superior mediastinum. A computerized tomography of the chest confirmed mediastinal abscess with tissue dissection by air. (Fig 2). Patient was taken up for transcervical drainage of the neck and mediastinum after doing an elective tracheotomy. Around 150-cc pus was drained from the neck and mediastinum. A negative suction drain was kept in superior mediastinum. The drain was removed on the 14th day. Culture of the aspirated pus demonstrated presence of Pseudomonas aeruginosa sensitive to ciprofloxacin and cefuroxime. Patient was discharged on the 18th postoperative day.