Subcutaneous Emphysema in Peri-Operative Period - An unusual case

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ABSTRACT

Pharyngeal perforation is a rare serious finding with fatal outcomes if not diagnosed and managed promptly(1). The main cause is an iatrogenic injury during pharyngeal instrumentation and commonly present with neck pain, swelling, and subcutaneous emphysema. Many predisposing factors played a major role like difficult instrumentation, pharyngeal infection and old age(2). In our case, we present a patient with prostate cancer who underwent radical prostatectomy and was found to have mediastinal and surgical emphysema.

Keywords: Pharyngeal perforation, pneumomediastinum.

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Subcutaneous emphysema during the perioperative period is a rare entity with a serious fatal outcome. A high index of suspicion is needed to diagnose and treat properly in the background of a wide differential diagnosis. Pharyngeal instrumentation during endotracheal intubation is considered a safe procedure especially in elective sitting though complication may occur rarely like iatrogenic pharyngeal perforation.

**Method**

This is a single case report.

**Case Report**

A 52 years old gentleman who is known to have diabetes mellitus type two on oral hypoglycemic agents. He was Admitted to our University Hospital as a case of Prostatic cancer where he underwent elective open suprapubic radical prostatectomy under general anesthesia. Difficult intubation was reported. Postoperative day one, he developed left side chest & neck pain associated with dyspnea and cough. He was hemodynamically within a normal limit with a heart rate of 94 beats per minute, Blood pressure of 127/70 mm Hg, Temperature of 36.8°C and Respiratory rate of 20. Local examination revealed surgical emphysema on the left side of the neck and anterior chest wall extending to the upper abdomen, left side neck tenderness and equal bilateral air entry. He underwent chest X-ray [figure 1] initially which demonstrated subcutaneous emphysema as well as pneumomediastinum. CT scan [figure 2,3] confirmed the findings. The patient underwent bronchoscopy which showed a normal tracheobronchial tree and a friable inflamed tissue in the pharynx with a small mucosal perforation on a base of candida infection. Then, the patient was managed conservatively in which he was kept NPO and on Intravenous solution for a couple of days. Repeat contrast swallow study showed no evidence of a leak.

He was discharged six days later with no residual complaints. Outpatient clinic follow-up showed complete clinical and radiological resolution [figure 4].

**Discussion**

Subcutaneous emphysema and pneumomediastinum are rare entities in perioperative period though it considers relatively common in critically ill patients(1). They are considered as earliest signs and mainly due to disruption of cutaneous barriers like in Tracheostomy, neck dissection and External trauma or disruption of mucosal barriers like in tracheal, esophageal, facial bone and dental procedures or Barotraumas like Valsalva maneuver, asthma, and positive pressure ventilation or infection. Factors can be related to patient, physician or instruments(3). A few case reports have been published in this regard with a deferent etiology.

We found that endotracheal intubation caused disruption of mucosal barrier of the pharynx which was weakened by candidiasis. Although endotracheal intubation is relatively considered a safe procedure tracheal, esophageal or pharyngeal perforation may occur during instrumentation markedly in difficult intubation setting(4)(5). Perforation most likely to occur in the posterior esophagus, piriform sinus or distal to cricoid pharyngeal muscle. Delay in diagnosis and treatment may happen and associated with a poor outcome like Mediastinitis, Retropharyngeal abscess, Pneumonia, Pericarditis and it may lead to death.

A high index of suspicion with clinical knowledge is very important to diagnose this rare entity with the help of Several modalities to confirm the diagnosis like chest radiography(6), CT scan, endoscopy and/or bronchoscopy(4). Once diagnose is established, the patient will go through either conservative for small perforation less than two cm long and contained or operative management for complication(7).

**Conclusion**
Figure 3.

Figure 4.
Subcutaneous emphysema must be recognized and treated promptly if encountered. Difficult intubation and pharyngeal infection are a predisposing factor that increased the risk of pharyngeal injury. Delay in diagnosis will increase the rate of mortality and morbidity. Management of such entity is complex and should be individualized according to clinical condition, size, the location of injury and condition of the field under expert team. Recognition of predisposing factors and oropharyngeal examination by skilled physician pre-intubation can prevent injury and/or complications.

References


