Case Reports

Surgical Emphysema after Tonsillectomy in Jordan University Hospital

Abdul M. Al-Layla,[1] Bassam Al-Barzangi,* [2] Izdiad Badran* [2]

Abstract

We report a case of a twenty-year old female patient who got subcutaneous emphysema following tonsillectomy.
The patient had general anesthesia, intubation and ventilation air bubbles were noticed intraoperatively by the surgeon; then the patient developed surgical emphysema involving the face, neck and upper chest. Clinical and radiological assessment revealed a previous surgery in emphysema which extend to the anterior mediastinum and anterior chest wall and bilateral axillae with air in the retro peritoneal cavity.
Management and follow-up where discussed, and to the best of our knowledge, our case is the first to be published from Jordan.

Keywords: Tonsillectomy, Surgical Emphysema.

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Introduction

Surgical (subcutaneous) emphysema is a pathological accumulation of air in tissues and organs.

It is one of the rare complications of ENT-Surgeries, especially after Tonsillectomy.

It is difficult to exclude injuries occurring during endotracheal intubation prior to surgical manipulation.

The exact mechanism of surgical emphysema is still unknown, but manipulation of the airway may force air to the subcutaneous tissue during or after surgical surgery.

We present a case of Surgical Emphysema occurring during Tonsillectomy in Jordan University Hospital.

The Case

A 20-year-old female patient underwent Tonsillectomy under general anesthesia with Intermittent Positive ventilation as a day case.

During the operation, the Surgeon noticed air bubbles coming from the tonsillar bed with oedema of pharyngeal mucosa and cripitus.

After the operation, it was noticed that the patient has surgical emphysema involving the face, neck and upper chest.

1- Consultant ENT-Surgeon, Jordan University Hospital, Amman, Jordan.
2- Consultant Anaesthetist, Jordan University Hospital, Amman, Jordan.
**** Correspondence should be addressed to:***
Abdul M. Al-Layla
E- mail: aallayla44@hotmail.com, aallayla@yahoo.com

She was extubated without upper airway obstruction or respiratory embarrassment.

The patient was then admitted to the ICU for observation and started on broad spectrum antibiotic. Chest and neck CT-Scan revealed significant surgical emphysema in the neck extending to the throat, to the anterior mediastinum and anterior chest wall, and bilateral axillae with air was seen in the retroperitoneal cavity.

Figure (1) shows surgical emphysema of the face and neck.

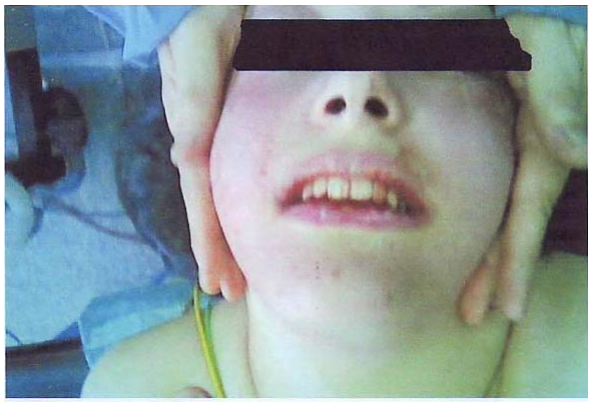

Figure (1): Surgical emphysema visible on the face and neck.

Figure (2) and (3) show surgical emphysema, pneumomediastinum and pneumoperitonium (on a chest x-ray), respectively.

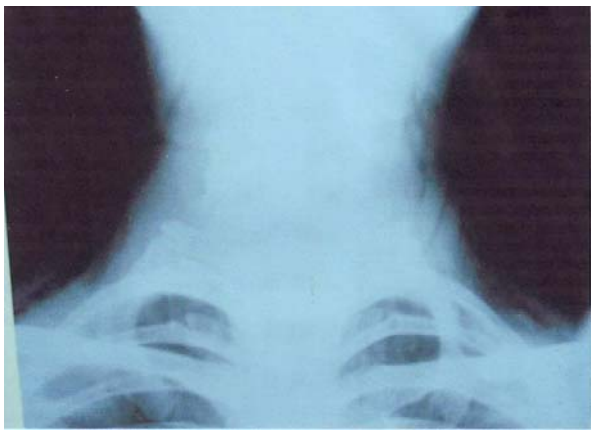

Figure (2): Neck X-ray showing surgical emphysema in the neck.

At the same night, she became confused and irritable, for which she received 5 mg of, a Haloperidol intravenously (an antipsychotic drug).

A brain CT-Scan has immediately been done, and it showed no focal lesion and no shift of midline structures. Over the next few days, the face and neck emphysema gradually decreased. After 2 days, the patient was transferred to the surgical ward; she stayed one day after which she was discharged to home with complete recovery.

She was followed up in the ENT-Clinic 10 days later and she was free of any emphysema.

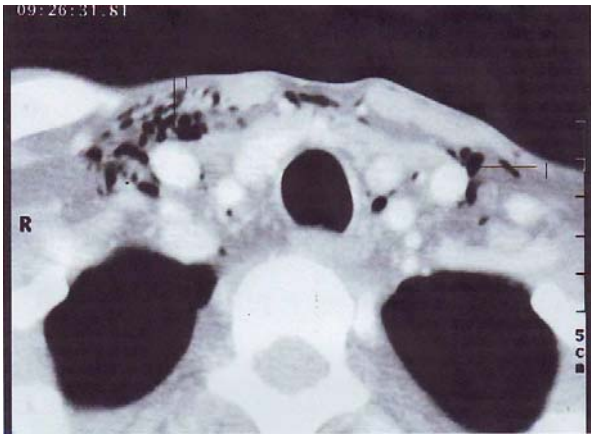

Figure (3): Neck CT-Scan showing air in the subcutaneous tissues on both sides, especially on the right side.

Discussion

The first report of emphysema after a tonsillectomy was by Luk`ianenke et al. in 1978.[1] The second report of tension pneumoperitonium as a complication of adenotonsillectomy came by Vos et al. in 1995.[2]

Since then, there appeared only 16 other reports in the literature of complications associated with Tonsillectomy. [3-17]

Of these 16 reportsm, 6 where case reports of neck and face surgical emphysema, some were with mediastinal emphysema. [4,6,8,10,14,16]

Leong et al. [18] reviewed all rare complications occurring after Tonsillectomy including intraoperative vascular injuries, subcutaneous emphysema, mediastinitis, atlantoaxial subluxation, cervical osteomyelitis and taste disorders. They came out with a conclusion that Tonsillectomy is after all not a straight forward procedure, because they are associated with significant morbidity like surgical emphysema.

It is not necessary for air to escape through an injury inflicted surgically to have a high pressure, although high pressure would promote the build up of emphysema.

Anatomically, the facial planes are connected to cervical soft tissues with the mediastinum.[23]

The presence of air in the subcutaneous or mediastinal tissues in itself is not dangerous, but its warrant prompts recognition of the underlying cause. Certain trauma-related causes may require surgical intervention. Otherwise, close supervision and broad spectrum antibiotics are all what is needed. [23]

There are several reports of injuries occurring during intubation and ventilation, which can cause surgical emphysema.[19-22]

We believe that what happened in this case was a combination of surgical manipulation and intubation and/or ventilation injury.

To conclude, it is important that the ENT-Surgeon and Anesthetist are aware of these complications, which can happen in a very straight forward operation like Tonsillectomy.

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الإنتفاخ الجراحي بعد إستئصال اللوزتين في مستشفى الجامعة الأردنية: تقرير حالة مرضية

عبد المنعم الليلة،[1] بسام البرزنجي،[2] ازدياد بدران [2]

1– مستشار جراحة الأنف والأذن والحنجرة، مستشفى الجامعة الأردنية، عمان، الأردن؛ 2– مستشار تخدير وإنعاش، مستشفى الجامعة الأردنية، عمان، الأردن

الملخص:

يعدّ الانتفاخ الهوائي تحت الجلد، الذي يحدث في أثناء إجراء عملية استئصال اللوزتين، من المضاعفات النادرة. وقد سُجلت هذه الحالة في مستشفى الجامعة الأردنية في عمان؛ إذ لاحظ الطبيب الجراح في أثناء إجرائه عملية جراحية لمريضة، وجود فقاعات هوائية تخرج من مكان العملية، وانتشر الهواء بعد العملية مباشرة تحت الجلد في منطقة الوجه والرقبة وأعلى الرأس، كما تبين من خلال التصوير الشعاعي والطبقي للصدر والبطن، تسرب الهواء في المنصف والغشاء البريتوني. ونوقش وضع المريضة الصحي والعلاج في وحدة العناية المركزة. وحسب علمنا، فإن هذه الحالة هي الأولى التي تسجل في المملكة الأردنية الهاشمية.

الكلمات الدالة: عملية استئصال اللوزتين، الانتفاخ الهوائي تحت الجلد.