Upper Airway Obstruction Secondary to a large neck abscess in a child at Thika District Hospital, Kenya: a Case Report

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Introduction and History
S.N. was a two year old who presented at the Thika District hospital, in Central Kenya, about 40 kilometers from Nairobi in September 2004. He had history of left sided progressive neck swelling, cough, agitation, fever, drooling and difficulty in breathing. The child had been treated for upper respiratory tract infection two weeks prior in nearby dispensary. The previous week at the district hospital, the child was treated for small neck swelling at the outpatient department. The child was given amoxicillin, and brufen. There was no record of aspirating the swelling at the district hospital during the initial presentation.

Physical Examination
On physical examination the child appeared toxic with labored breathing. Temperature was 38.5% and there was increased respiratory rate (at 45/min) with use of accessory muscles. There was a neck swelling with the largest diameter at 10cm, fluctuant and spreading over the whole lateral aspect of the neck spanning over the anterior and posterior triangle. The skin was shiny, very thinned and at body temperature. The trachea was deviated to the right. Oral examination revealed fullness on the left palatal area but the chest was found to be clear. Other systems were essentially normal.

Investigations and Results
On laboratory investigations, a haemogram showed leucocytosis of $17.5 \times 10^9/L$ neutrophilia of 78% and haemoglobin of 12.5g/dl. Chest X-ray was not done. Aspiration of the mass was done using a gauge 21 needle and greenish yellow pus was drained. After aspiration, a small incision after an ethyl choride anesthetic skin spray was made and all the pus drained totaling about 1000ml. There was immediate breathing relief with trachea springing into the midline. A diagnosis of obstructive neck abscess was made. The child was put flucloxacillin, ibuprofen and metronidazole syrups. Culture facilities were not available at the time. Dressing was to be continued at the nearest health centre. A review one week, and three weeks later revealed a stable child with no signs of recurrence.

Discussion.
Various causes of upper airway obstruction have been described in the paediatric age group. These include infective processes like neck abscesses. (1,2,3,4). Other causes include, trauma, head and neck cancers and foreign bodies. Neck abscesses can enlarge rapidly to rarely cause acute airway obstruction. This is because most patients with deep neck infections are put on
antibiotics in our set up even for very minor problems. Neck abscesses can occur in any part of the neck.

In this particular case because of the size of the abscess it was difficult to establish whether it was a parapharyngeal abscess in origin because the mass spanned both anterior and posterior triangles. Since children younger than one year may tend to have submandibular, submental abscesses, with anterior and posterior triangle involvement, the origin could have been a parapharyngeal abscess since there was medial displacement of intraoral tissues (1). The symptoms the child had of drooling, cough, agitation, fever and a huge neck mass were not unusual. Stridor and breathing difficulties are not however common,(1,2,3)

Aspiration of any neck mass as long as it’s not pulsatile should be encouraged even in primary care setting. Apart from narrowing treatment inception time this has also been used for treatment of the abscesses as a repeat procedure (5). This coupled with Fine Needle aspiration cytology (FNA) especially for non acute masses in the neck greatly aids diagnosis since diagnostic specificity when there is no obvious pus can reach 85% (6). A recurrent neck abscess despite aspiration may be a signal of cancer especially in older children and adults.(5)

Prompt clinical suspicion followed by diagnostic aspiration can avoid size progression of the masses. Retropharyngeal abscesses would be more difficult to diagnose, since symptoms resemble those of severe upper respiratory tract infections. (1).

Investigations recommended should be geared towards underlying pathology. Chest X-ray, full haemogram, base line urea and electrolytes should be done. CTscan would be an expensive undertaking in our set up except in exceptional cases ad would not be a routine test. Raised white cells like in our case and ESR are among the deranged parameters.

Small abscesses can be treated through multiple aspirations in older children especially in primary care setting. (2,5). The great vessels have been shown to be anteromedial to lateral neck abscesses so in these cases it would safe to aspirate. CTSCan guided aspiration is now common in developed countries especially for combined retropharyngeal / para pharyngeal abscesses in trans oral drainage (2). Obstruction from neck abscesses is a life threatening condition. In Ludwigs’s angina there is little or no pus when one aspirates the swelling. It also presents in a more rapid format. A parapharyngeal neck abscess causes obstruction and difficulty in breathing besides toxic symptoms. It is important to note the degree of obstruction with a view to the rapid relief of the symptom.

The treatment of acute obstructing neck abscesses should follow normal process of assessing airway obstruction; preliminary procedures should include, positioning of the patient in the most comfortable way and a quick aspiration to confirm diagnosis. Chest X-ray, baseline blood works should then be quickly done. Once confirmed incision and drainage with aspiration first to relieve the obstruction should be done. Although commonly carried out for acute airway obstructions for other diagnoses, tracheostomy in cases like this would rarely be necessary for a large neck abscess since it’s easier to drain it surgically. Antibiotics given should be broad spectrum, and culture taken if possible (1,2). Anaerobes must always be considered in the chemotherapy in addition to the gram positive organisms. Staphylococcus aureus and Group A streptococcus among that are commonest isolates from the infections (1).

Proper health education to the parents in seeking treatment for upper respiratory tract infections and educating the primary healthcare worker is important to avoid delay in diagnosis resulting in large obstructive infections which can be contained earlier.

Limitations
It was not possible to get clear records of the initial management given the patient due to scanty referral information.

Conclusion:
Large abscesses are still occur in developing countries. Delay in seeking help, far-placed health facilities or financial lack may be some of the reasons that airway obstruction still occurs from these containable causes. Further studies need to determine proper preventive protocols.
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