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STRAND MULTIPRINT (PVT) LTD

Sinister unilateral tonsillar enlargement

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Introduction

Tonsillectomy is one of those routine simple and safe procedures that can be delegated to juniors. The procedure is now even being done as day surgery. Tonsillectomy is commonly bilateral, but unilateral tonsillar enlargement can occur especially in the presence of an infective process. This case report, however, serves to highlight the hazards that could occur with tonsillectomy.

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Case Report

A 56 year old woman presented for a unilateral right-sided tonsillectomy at a private hospital. She had history of a recurrent tonsillitis and severe shortness of breath on exertion and on lying flat; she normally used two to three pillows at night. The family also complained of her heavy snoring and daytime somnolence. The symptoms had been gradual but progressive. A week prior to her referral for an Ear Nose and Throat (ENT) opinion, she had been seen by her general practitioner (GP) who on physical examination found a mass in the right tonsillar fossa. He had then diagnosed a tonsillar abscess because of the fever, cough and sore throat. He had used a wide bore-needle in an attempt to aspirate it. The aspirate yielded mostly blood which was stained with whitish material which he thought was pus.

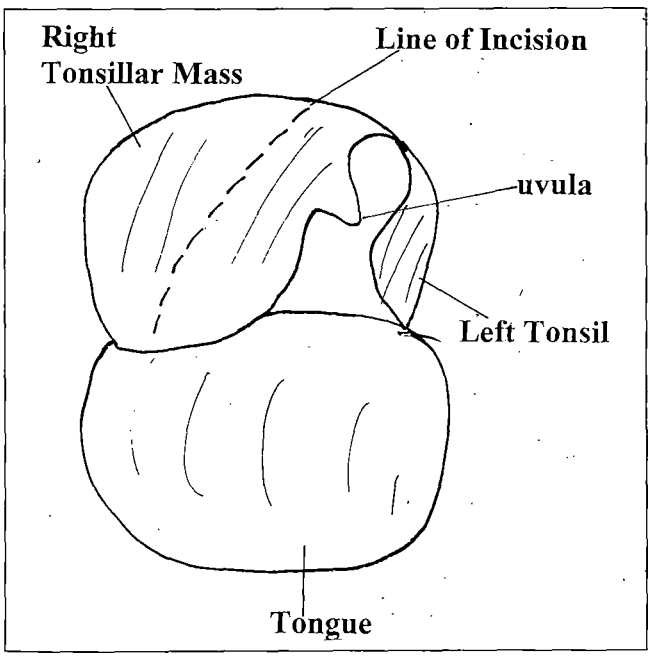
A course of antibiotics was prescribed for a week before the ENT referral. Apparently, the patient noted some improvement except for the breathlessness and snoring which continued unabated. Examination by the ENT surgeon revealed an enlarged right tonsil crossing the midline. The left tonsil was normal. She had a raised white cell count (wbc 8x1000/mm^3) with a normal haemoglobin concentration of 13g/dL.

Pre-operative anaesthetic assessment was done on the morning of the operation since she was being handled as a day case patient. She was obese (90kg) and displayed significant anxiety. However, no anxiolytic premedication was prescribed in view of the history of upper airway obstruction during sleep. She had no signs of cardiac decompensation although she expressed her wish to remain in the propped up position in bed with two pillows. Airway assessment predicted no problems with intubation.

The patient was not on any medication at this presentation and had no history of allergies. She denied ever having had an anaesthetic although retrospectively, it transpired she had had a previous general anaesthetic, but surgery was abandoned then because blood was aspirated from the right tonsil. This was at a government hospital. Incidentally she also had a left cataract. Retrospectively she was noted to have a right carotid artery bruit.

Induction of anaesthesia and intubation of the trachea were uneventful, however the anaesthetist (co-author) commented on the large size of the right tonsil which was extending beyond the midline to the left. On examination, it was noted that it was well encapsulated measuring 6 x 5 cm, extending across to the midline, well over to the left, onto the anterior tonsillar pillar. Dissection of the anterior pillar was then done with a pair of scissors as per attached diagram (Figure I). A plane of separation between the mass

Figure I: Relation of right tonsilar mass to the left tonsil.



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and lateral pharyngeal wall was established but at this point, the mass was noted to be compressible with a palpable thrill. On further examination it was confirmed that the mass was of vascular origin filling from the right common carotid artery. Auscultation revealed a loud bruit and at this point a diagnosis of carotid artery aneurysm was made.

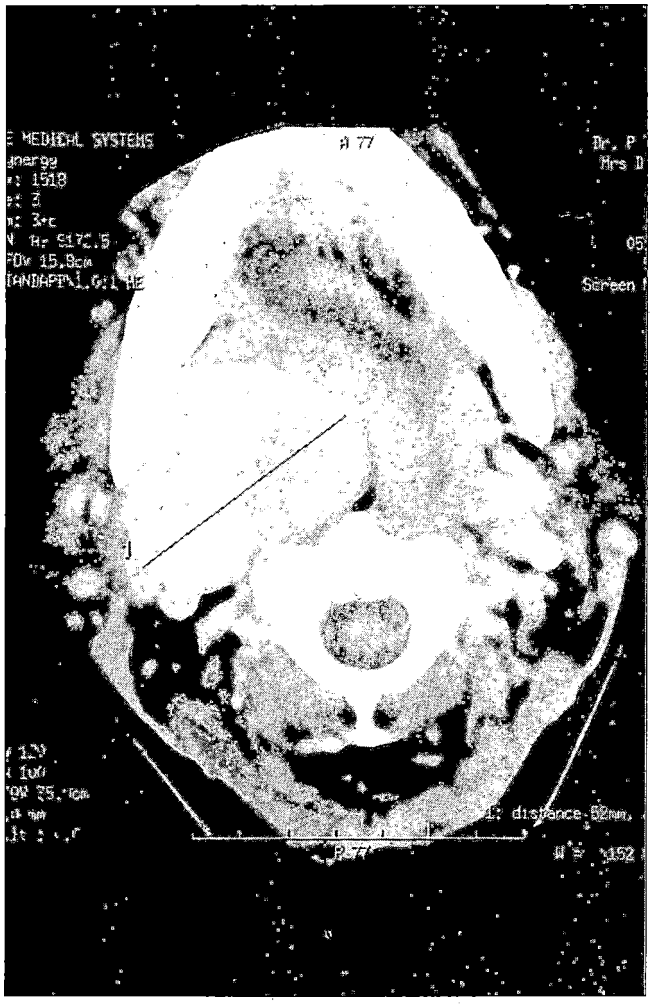
The procedure was abandoned after securing haemostasis. On extubation the patient had severe upper airway obstruction necessitating reintubation. The decision to perform an elective tracheostomy at this point was deferred since there was not much change in the definition of the mass after abandoning surgery. She was successfully extubated after 30 minutes and was able to maintain upper airway patency while propped up in bed. She was kept in a recovery room propped up in bed for about eight hours for fear that she might deteriorate on the ward. Monitoring included electrocardiogph (ECG), non-invasive automatic blood pressure and oxygen saturation (Spo2). An emergency surgical tracheostomy set was kept on standby.

During the recovery period, her neck slowly but progressively became swollen on the right side and she developed laboured breathing. When a respiratory arrest seemed imminent, an emergency tracheostomy was done on the recovery bed. During the procedure she had a respiratory arrest with transient bradycardia. Oxygenation was maintained by manual bag-valve-mask ventilation. Surgical access was very difficult due to the neck swelling, position on recovery bed and poor lighting. After the establishment of a tracheostomy the patient was ventilated for 36 hours in the high dependency unit (HDU) with adjuncts like dexamethasone and diclofenac added to try and reduce the cervical swelling. She was fit for computed tomography (CT) scan and angiogram about 48 hours post operatively. Part of the CT scan report read "There is a large mass seen in the right carotid region with cranial extension, and also extending into the oral cavity. This measures 52mm in diameter. Left carotid artery and jugular vein are normal. Impression; right carotid artery aneurysm" (Figure II).

The consensus of the radiologist, ENT surgeon, vascular surgeon and anaesthetist, was that both CT scan and angiogram were not conclusive in that they failed to delineate size of the lesion and any form of collateral circulation. However, the aneurysmectomy had to be done as a matter of urgency since the patient kept on bleeding intermittently. The patient was transferred to a central government hospital which was better equipped for carotid aneurysmectomy. Apart from a blood loss of 1.5 litres intra-operatively, the procedure was uneventful.

Post operatively she was ventilated for 24 hours in the Intensive Care Unit via the tracheostomy. She was then allowed to wake up from the sedation and examination revealed no neurological deficit. She was discharged to the ward on the third post operative day. It was during the post operative period that another ENT surgeon came to know about this patient and he remembered her as having defaulted

Figure II: CT Scan showing a large intra-oral aneurysm



review two to three years earlier after suspecting her of having a carotid artery aneurysm. She was a government patient then. He had noted a bluish pulsatile mass in the right tonsillar space on the operating table when she was scheduled for tonsillectomy again. He had asked for investigations to be done and she disappeared only to resurface in another ENT surgeon's pool of private patients now requiring urgent tonsillectomy.

Unfortunately, she developed left sided weakness on the third day. She had features of bulbar palsy which was progressive during the entire recuperative period. For two weeks, she deteriorated and then died exactly four weeks from the initial attempted private day surgery tonsillectomy.

Discussion

Carotid artery pseudoaneurysm complicating tonsillar or peritonsilar sepsis has been described before.[1-5] This complication was more common prior to the advent of antibiotics. Its rarity in this antibiotic era makes it a very sinister and dangerous condition because it can easily be misdiagnosed as happened in this case. There have been suggestions that ultrasonography[7,9] and doppler[8] studies for the tonsillocarotid distance could be used where there is any suspicion, especially in a unilateral tonsillar mass.

The anatomical relationship of the internal carotid artery and the tonsillar fossa has been shown to vary[8,9,11,19] making even the routine tonsillectomy very unsafe in inexperienced hands.

Due to its unpredictable course, aspiration of tonsillar mass or abscess predisposes to internal carotid artery (ICA) puncture and pseudo-aneurysm formation. Sepsis of the peritonsillar space may lead to either narrowing[12] or intimal weakening which may predispose to ICA erosive haemorrhage and pseudo-aneurysm formation.[13]

However, the ICA narrowing has not been shown to be associated with any neurological complaints.

Our patient had a number of unusual features, some of which should have alerted us to the possibility of ICA pseudo-aneurysm. However, some of the information was gained in retrospect. She had a large unilateral tonsillar mass which at one time was associated with a fever.

The GP had also attempted wide-bore needle aspiration of the mass with limited success. Although the fever settled with antibiotics the actual mass did not significantly alter in size. The tonsillar mass was large enough to cause obstructive sleep apnoea and orthopnoea. In fact, it was the patient's heavy snoring and sleepless nights that prompted the relatives to bring the patient for medical attention for the second time. She did not disclose her full medical history including the fact that one ENT specialist had asked her to go for further radiological investigations before the operation. Despite her obvious anxiety and expressed fear of the operation, she still decided to go ahead with it and nearly died peri-operatively. The case raises a number of issues including:

a. Misdiagnosis (probably due to rarity of condition).
b. "Window-shopping" for medical management.
c. Non-disclosure of medical information or history.
d. Limitations of local radiological expertise.
e. Elective tracheostomy.

Surgical experience probably prevented an intraoperative death in this case. Had the case been handled by a junior, the aneurysm would have probably been opened intra-orally with disastrous consequences. Although her condition is rare, probably the progressive four year history (if she had disclosed it) would have alerted the surgeon to the possibility of an aneurysm. The patient decided not to revisit her initial doctor because she had not complied with his request for radiological investigation. She, instead, put everything about her medical history behind her and started afresh with a new set of doctors. This "window shopping" kind of attitude for medical management, is dangerous. This patient nearly lost her life peri-operatively, ending up being ventilated for 36 hours in a hospital which was not well equipped for intensive care. The radiological investigations done post recovery to define the lesion were not conclusive. These included ultrasonograph, C T scan and angiography.

It was not clear why this patient developed a stroke on the third day post aneurysmectomy. The possibility of an embolic phenomenon and/or inadequate collateral circulation leading to an infarct exists. The stroke was progressive and never improved up to her death. After attempted tonsillectomy and post extubation, this patient had upper airway obstruction which resolved with upright positioning in bed. However, the cervical swelling progressively (over eight hours) compromised the airway leading to respiratory arrest. There was enough warning and an early tracheostomy should have been perfomed. It could be argued that in a situation like this where the airway could suddenly get compromised an elective tracheostomy is desirable.

As a matter of principle, it is safer to do elective tracheostomy in patients who have acute neck swelling (burn, trauma, bleeding, etc.) as these patients are likely to lose the airway with time.

This case highlighted that all patients should be treated as a unique entity and that clinical vigilance should be maintained even on cases which seem benign and routine. The cervical region is an 'anatomical minefield' and therefore any lumps and bumps, internal or external, should be approached with great surgical caution.

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