



**PSEUDOANEURYSM OF COMMON CAROTID ARTERY FOLLOWING FINE-NEEDLE ASPIRATION OF CERVICAL LYMPH NODE -A Rare case Report**

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**Abstract :**

Iatrogenic injury to common carotid artery leading to Pseudo aneurysm is extremely uncommon in adults . we report a case of pseudo-aneurysm of common carotid artery in a 40 Year adult following Fine needle aspiration of a neck node. we report this is as the first case in literature, where pseudo-aneurysm of common carotid artery occurred in an adult following FNAC of neck node. .This case is presented not only for its rarity but to emphasis the paramount importance of doing FNAC with finer needle under USG guidance in preventing such life threatening complication.

**Keyword** :Pseudoanerusym,Common carotid artery Pseudoanerusym,FNAC,

**Introduction:**

Iatrogenic injury to common carotid artery leading to Pseudo aneurysm is extremely uncommon in adults and usually occurs

after endarterectomy, cervical spine injury, transluminal angioplasty and intra oral biopsy. Pseudo aneurysm of common carotid artery following Fine needle aspiration cytology has been reported in children but its occurrence in adults have not been reported in literature . we report such a rare case of pseudo-aneurysm of common carotid artery in an adult following Fine needle aspiration of a neck node.

**Case Report**

A 40 year old male , manual labourer by occupation and a known case of pulmonary tuberculosis on anti tuberculosis drugs ,developed a peanut shaped tender swelling in left side of neck which on ultrasonogram of neck revealed as a lymph node, for which he underwent fine needle aspiration of the node one month back. Following FNAC he developed a diffuse swelling in the left side of neck which gradually increased in size for past one month to attain the present size.

It was associated with hoarseness of voice and difficulty in breathing. On General examination he was pale, his vitals were stable and local examination revealed a warm, pulsatile, tender swelling of size 9\*8 cm occupying the entire left side of neck extending to midline deviating trachea to right side. Indirect laryngoscopy showed a left vocal cord palsy. His blood investigation showed anaemia with lymphocytosis, raised ESR, blood culture showed no growth, VDRL was negative and serology for HIV was negative. Ultra sonogram of neck and CT-Angiogram showed pseudo aneurysm of size 10\*12 cm arising from Common carotid artery. Since patient had an expanding and symptomatic pseudo aneurysm he was taken up for surgery under General anaesthesia with Nasotracheal intubation and Central line and arterial line in place for monitoring. Midline Sternotomy was done and proximal CCA control was taken. Neck incision made parallel to sternocleidomastoid muscle. External carotid artery, Internal carotid artery control was taken. Then Pseudo aneurysm sac was opened and 300ml of blood clot was removed. There was a rent in cervical part of CCA measuring 1\*1 cm which was closed with 7.0 Polypropylene and reinforced with a pericardial pledget. After complete haemostasis, wound was closed after placing a drain. Post operatively he was put on elective ventilation for 24 hrs and then extubated. He was discharged on eighth postoperative day.

### **Discussion:**

Iatrogenic injury to common carotid artery leading to Pseudo aneurysm is extremely uncommon in adults and is usually seen after endarterectomies, cervical spine injury, Tonsillectomy, Intra-oral biopsy, and transluminal angioplasty. There are case reports of Pseudo aneurysm occurring in external carotid artery and inferior thyroid artery following FNAC in literature, Pseudo-aneurysm of common carotid artery following FNAC has been reported in children but not in adults.

The reason being the needle used for FNAC is very fine, FNAC are done usually under USG guidance and the carotid sheath usually shields the CCA to prevent the extension and formation of Pseudo-aneurysm. The probable factor contributing to pseudo-aneurysm in our case is FNAC was not done under USG guidance, since the initial aspirate did not reveal tissue material multiple punctures were made, the last puncture had a bloody aspirate and there was no external compression given. Pseudo aneurysm are treated by ultrasound guided compression therapy, thrombin injection under ultrasound guidance, surgically by ligation of the vessel or closure of the defect in the artery by vein or prosthetic patch and endovascularly by covered stent insertion or coil embolisation. Ultrasound guided compression therapy is suited for pseudo aneurysm with small neck less than 5mm and in vessels which can be compressed against a bony structure like the common femoral artery which can be compressed against the femoral head. In our case the sac was big and neck could not be visualised, moreover patient had tenderness over the swelling and had difficulty in breathing, hence it was not tried in our case. Fibrin glue injection under ultrasound guidance is suited for patients where in the neck can be compressed completely, thereby preventing glue entering the native vessel leading to thrombosis. In our case as the sac was large and the neck cannot be compressed, which could lead to the glue entering the common carotid artery leading to thrombosis and even stroke,

so this modality was not tried. Endovascular option of inserting a Covered stent has advantages like avoiding surgery, it is less invasive and can be used in very sick patients who are not suitable for surgery or vessels where surgical exposures are difficult. In our case such a Covered stent could have prevented a Sternotomy but issues like cost, long term patency associated with these stents and need to remove thrombus causing compression symptoms made it a non viable option. Other Endovascular option was Coil embolization, it has the same advantage like Covered stent but in our case it was not tried as the sac was big and the need for multiple coils to embolise it leading to the increased cost and moreover the need for removal of thrombus to relieve compression. Surgical option of ligation of the vessel proximal and distal to the aneurysm is done in infected pseudo aneurysm, this leads to end organ ischemia and to prevent this a bypass with autogenous vein through a non infected area is required. In our case pseudo aneurysm was not infected so this option was not used. As our patient had a small defect in the common carotid viable option is closure of the rent with vein or prosthetic patch is a viable option, in order to do this a proximal and distal control is needed. In our case the lower margin is merging with clavicle, so proximal control of Common carotid artery in the neck is not possible hence a midline sternotomy was performed. The other option of preventing the sternotomy for proximal control could be use of compliant balloon to occlude the Common carotid artery at its origin endovascularly, due to lack of hybrid operation theatres this was not possible in our centre.

## Conclusion:

Even though pseudo-aneurysm of common carotid artery following FNAC is rare, it must be kept in mind as a potential lethal complication while doing FNAC for neck nodes. This case is presented not only for its rarity but to emphasize the paramount importance of doing FNAC with finer needle under USG guidance in preventing such life threatening complication. There are multiple treatment options available for managing these cases, the best treatment option must be tailored for each individual patient considering their general condition and anatomic feasibility.

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**Case report:**

J Neurosurg Pediatr. 2008 Mar ;1(3):240-3. doi: Pseudoaneurysm of inferiorer thyroid artery presnting as thyroid nod-ule: thyroid;Jan2009, Vol. 19 Issue 1, p69:Hua Sun Kim; Jinna Kim; Eung Yeop Kim; Seung-Koo Lee; Dong Ik Kim; Woung Youn Chung



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