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## CASE REPORT

### A CASE OF LOOPING OF INTERNAL CAROTID ARTERY DISCOVERED DURING NECK DISSECTION

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#### ABSTRACT

Internal carotid artery usually runs a straight course in the neck. Anomalies of ICA are rare and among them looping of ICA are very rare. Such anomalies can lead to injury to ICA during neck surgeries. We report a case looping of ICA in a patient with carcinoma tongue and detected during elective neck dissection

##### Key words:

Anomalies,  
ICA,  
Carcinoma,  
Surgeries.

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## INTRODUCTION

During neck dissection and other surgeries of the neck; the common carotid artery, carotid bifurcation, ICA and ECA are important landmarks. Any injury to these structures esp CC and ICA can lead to lethal complications. Most of the text books describes that the cervical part of ICA runs a straight course without any branches. But an anomalous ICA can occur and if we are not anticipating it, may get injured during the surgery (Drake *et al.*, 2010; Standring, 2005 and Snell, 2004). We report a case of looping of ICA in a patient with carcinoma tongue, who underwent Wide excision of the primary and prophylactic neck dissection from our Institute.

### Case Report

A 40 year old male presented with carcinoma tongue on left lateral border and was staged as T1N0M0. He does not have any co-morbidities and there was no history of neurological deficits or syncopal attack. He was planned for Wide excision of the primary and prophylactic neck dissection on left side of the neck. An extended supraomohyoid neck dissection was done and there were no significant lymph node enlargement. During neck dissection, we found a nodular swelling at level 2, lateral to the carotid sheath and over the prevertebral fascia. The swelling was embedded in fat and pulsatile on palpation.

After careful meticulous dissection we found out that it was actually a loop from the internal carotid artery. Due to the clinical suspicion and meticulous dissection, an injury to the ICA was avoided. Patient is under regular follow up without any disease recurrence and any other symptoms.

## DISCUSSION

The ICA arises at the level of intervertebral disc between 3<sup>rd</sup> and 4<sup>th</sup> cervical vertebrae, lateral to the upper border of thyroid cartilage. During its course it is subdivided in to cervical, petrous, cavernous and cerebral parts. The cervical part ascends anterior to the transverse process of upper three cervical vertebrae, with in the carotid sheath. At the external opening of the carotid canal, in the petrous part of the temporal bone, it becomes continuous with the petrous part of ICA. (Drake *et al.*, 2010; Standring, 2005 and Snell, 2004).

Anatomic variations of ICA were reported as early in nineteenth century. The incidence of such variations was found to be between 10-40%. According to Paulsen *et al* 191 patients (67.3%) out of 282 had a straight course of ICA and 17 patients had either kinking or coiling. Their study reported only 1.77% patients with looping of ICA. In 2013, Rajendra *et al* reported that only five of their patients out of 102 patients and 119 neck dissections had variations in ICA (Paulsen, 2000; Rajendra and Metgudmath, 2013). In 1965, Wiebel and Fields classified ICA anomalies as a) straight course of ICA, b) an s or c shaped elongation with medial or lateral displacement, c) a kinking of one or more segments and d)

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coiling. Such anomalies can be congenital or acquired (Weibel and Fields, 1965). The ICA develops from third aortic arch and the cervical part of dorsal aorta. A loop will be formed at the junction between two blood vessels reaching its maximum extension in the fifth and sixth weeks of gestation. The large blood vessels and the heart descends in to the mediastinum and results in elongation and straightening of the artery. Failure of this process, incomplete development or accidental linear growth can lead to the persistence of the loop. The elongation, loss of elasticity, atherosclerosis, fibromuscular dysplasia can also lead to looping or kinking (Kelly, 1925 and Cairney, 1924).

### Conclusion

During neck surgeries these variations should be kept in mind. In most of the institutions in India and other developing countries, imaging is not done routinely prior to an elective neck dissection for oral malignancies. In such situations, a systematic clinical examination, in depth knowledge about the anatomy and variations of ICA and meticulous dissection will help to prevent injury to these vital structures.

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