ABSTRACT

The presentation of a recurrent laryngeal nerve (RLN) is the most important and the most difficult procedure in a thyroid or parathyroid surgery. Normally, the RLN runs in the tracheoesophageal groove, but the chance of injury during operation is increased if the normal position of the RLN changes. In 1823, a non-recurrent laryngeal nerve (NRLN), first reported by Stedman, is known to be found in 1% of people and much related with abnormality of a major vessel. Our objective is to report the diagnostic methods of the NRLN with abnormality of the right subclavian artery through CT angiography (CTA).

INTRODUCTION

The 68 year-old woman got Rt. thyroid lobectomy at another hospital, and thyroid anaplastic carcinoma was reported. She visited our hospital for re-grossing thyroid mass and had Lt. vocal cord palsy. Through CTA, we found 3x2cm sized Rt. thyroid mass, pathologic lymph nodes and anterior larya. Preoperatively, NRLN was found on the left side on the neck andLt. vocal cord palsy. Postoperatively, normal Rt. vocal fold movement was noted.

CASE 1

A 52 year-old woman was admitted for incidentaloma in the right thyroid, A 68 year-old woman complained of the re-growing thyroid mass and had Lt. vocal cord palsy. Through CTA, we diagnosed as thyroid follicular carcinoma. Intraoperatively, we found NRLN running into the thyroid just beneath it. We dissected the nerve carefully from around with much time passed and preserved it. Postoperatively, normal vocal cord mobility was examined, and no vocal fold palsy was found after discharge.

CASE 2

A 33 year-old woman visited for Rt. neck mass for 3 months. 3x2cm sized Rt. thyroid papillary cancer was diagnosed with neck CT and NAB. She complained of hoarseness for 1 year, but preoperative vocal cord mobility was normal and Lt. hemorrhagic polyp on Lt. vocal fold was found. After vocal polyp was excised with LASER, we found the diffusely enlarged Rt. thyroid lobe. After intraoperative thyroid artery was found and ligated with microclips, we found the non-recurrent laryngeal nerve beneath the artery, but didn’t preserve it. We couldn’t find the normal RLN anywhere. We traced the cut nerve course, confirmed that the nerve was the NRLN, and performed the neurotomy. Postoperatively, parasymmetrical function of Lt. vocal fold was noted.

RESULT & DISCUSSION

We preserved the RLN in case 1, sacrificed it not predicting its presence in case 2, and preserved it as knowing its presence by CTA. We can avoid the damage of the NRLN that happened because we can predict enough possibility of it preoperatively. And we can classify as aberrant subclavian artery, or arteria lusoria(Fig.7, Fig.8) and normal subclavian artery(Fig.12) more correctly and more easily by CTA, even though we can do by only CT(Fig.3, Fig.6). When there is the anomaly that an aberrant subclavian artery originates directly from the aortic arch, the Rt. RLN runs directly into the larynx from the vagus nerve without turning the brachiocephalic artery. Because the arteria lusoria is the most common aortic arch anomaly. But as every anomaly of an artery originating from the aorta or run the arteria lusoria, we can differ the arteria lusoria differentially by CTA from other anomalies such as a double aortic arch similar to the arteria lusoria on CT(Fig.9, Fig.10). A double aortic arch has the RLN running in the normal nerve course(Fig.11). If we don’t differentiate between the two varieties, we’ll spend much more time finding the nerve than usual because of an incorrect prediction by CT. So, we can say that we should use CTA when we predict the NRLN. The preservation of the RLN in the tracheoesophageal is key for postoperative voice, respiration and swallowing.

REFERENCES

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Preoperative CT diagnosis of right nonrecurrent inferior laryngeal nerve.

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