A rare large tracheal glomus tumor with postoperative haematemesis

Mingyu Fan1, Chengwu Liu1, Jiandong Mei1, Lin Pan2, Huijiao Chen3, Lunxu Liu1

1Department of Thoracic Surgery, 2West China School of Medicine, 3Department of Pathology, West China Hospital, Sichuan University, Chengdu 610041, China

ABSTRACT

Glomus tumors are uncommon benign tumors which usually arise from the distal portion of the digits. A tracheal glomus tumor with large size is extremely rare. We present a case of a large tracheal glomus tumor that was resected using posterolateral thoracotomy and successful primary reconstruction of the trachea was achieved. Severe haematemesis happened after the patient was discharged. An emergency exploratory thoracotomy was performed but no signs of anastomotic bleeding were observed, while intraoperative gastroscopy revealed plenty of blood and blood clots in the patient’s stomach. Medical treatments targeting hemorrhage of upper digestive tract were given and the patient finally recovered.

KEYWORDS

Glomus tumor; trachea; haematemesis

The operation was performed via right posterolateral thoracotomy through the fourth intercostal space. During the operation, a mass with a base about 2.0 cm in diameter was found to be located at the posterior tracheal wall and no pleural adhesion or effusion was found. En bloc resection of the tumor was achieved with 0.5 cm spare of both surgical margins. The tumor was taken out and measured. Maximal and minimal diameter was 2.5 and 2.0 cm respectively. Frozen-section pathological examination confirmed a benign tumor with negative resection margins. Then, tracheal anastomosis was performed by continuous suture using 3-0 prolene stitches. Postoperative bronchoscopy showed that the trachea was successfully anastomosed with no stricture or bleeding (Figure 2).

The tumor was pathologically diagnosed as glomus tumor. The patient’s symptoms were relieved and was discharged 11 days after surgery without any main complication.

Three hours later, the boy was sent to the emergency room (ER) with severe hemoptysis, or probably, haematemesis. He was attacked by cardiac arrest and was fortunately resuscitated by CPR. Lots of fresh blood was sucked out via endotracheal suction. Anastomotic bleeding came up as the first diagnosis. An emergency exploratory thoracotomy through the original incision was performed immediately. There was about 400 mL pleural effusion in the right chest, but no active bleeding was found, intraoperative bronchoscopy did not find any bleeding site in the anastomotic stoma either. Then upper gastrointestinal hemorrhage came in to consideration, and intraoperative gastroscopy was assigned. It found plenty of blood and blood clots in the stomach but further exploration was restrained.
because of poor imaging field. Thus, the patient was treated by hypervolemic therapy, hemostasis therapy with somatostatin and Carbazochrome Sodium Sulfonate, gastrointestinal decompression, anti-infection therapy and nutrition support. Postoperative enhanced abdominal CT scan with vascular reconstruction showed nothing abnormal. Another gastroscopy 2 weeks later found nothing special either. The patient finally recovered and was discharged 3 weeks after surgery. The symptoms disappeared, and no sign of postoperative stenosis was found at the patient’s 1-year follow up, neither was recurrence or hemorrhage.

Discussion

Glomus tumors are biologically benign but often painful tumors arising from modified SMCs of the glomus body, histologically, these tumors are aggregates, nests, and masses of specialized glomus cells associated with branching vascular channels, all surrounded by connective tissue matrix.

In the sections of the tumor, plenty of small round or oval cells, vessels and smooth muscle were seen by microscope. Immunohistochemistry stain supported the diagnosis of glomus tumor (Figure 3).
Surgical removal of the tumor with primary reconstruction of trachea was usually the first choice for treatment (3). Successful removal via flexible bronchoscope has been reported (4), but in their case, the tumor was 2.0 cm × 1.0 cm in size and there seemed to be no tight adhesion with tissue surrounding though it locates at the lower tracheal segment. Cervical collar incision has also been reported recently (5), and in their case, the tumor was 1.3 cm × 1.2 cm in size, located at the upper portion of the trachea. On the other hand, posterolateral thoracotomy, instead of bronchoscope, was performed on our patient because the tumor located at the lower portion of trachea, had a relatively large size, the base of the tumor was wide and risk of severe bleeding was high.

To our knowledge, this is the first report of postoperative severe hemorrhage of upper digestive tract after removal of tracheal glomus tumor. However, the reason that caused the severe hemorrhage after the first surgery remains unclear. Glomus tumor of the stomach has been reported (6), as well as multiple lesions (7). With regard to our case, nothing abnormal was found through radiological and endoscopic examinations. Therefore, we made two hypotheses as following: first, the patient simultaneously suffered from another mini glomus tumor, which caused severe hemorrhage but could hardly be detected by CT scan or gastroscopy; second, the patient suffered from severe stress ulcer due to the surgery and the ulcer had been cured when postoperative gastroscopy was performed. When we reviewed the treatment strategies, the second thoracotomy seemed to be unnecessary since it only played a role in excluding problems of anastomotic stoma, which could be manifested by bronchoscopy, a simpler and less invasive test. If we chose to apply the bronchoscopy to check whether the anastomotic bleeding existed at the beginning, the second thoracotomy could be avoided.

**Conclusions**

Glomus tumor is rare benign tumor derived from soft tissue with good long-term prognosis (8). While coping with patients with tracheal glomus tumor, potential multiple lesions should be intentionally evaluated. Tracheal resection via thoracotomy should be taken in order to remove the tumor of lower portion of the trachea or with a relatively large size (maximum diameter >2.0 cm) safely and integrally. In addition, the misdiagnosis of the case reminds us to confirm the anastomotic bleeding carefully as long as the situation is not extremely urgent so that unnecessary invasive procedures can be avoided.

**Acknowledgements**

Disclosure: The authors declare no conflict of interest.
References


