CASE REPORT

Gastric malignancy presenting as a neck swelling to the otorhinolaryngologists: a case of internal jugular venous thrombosis

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SUMMARY

A woman aged 69 years presented with a 2-week history of left-sided neck swelling, dysphagia and night sweats. CT revealed an internal jugular venous thrombosis, multiple pulmonary emboli and gastric thickening. Endoscopy found a haemorrhagic fundal polypoidal tumour; biopsies diagnosed a gastric adenocarcinoma, Lauren's intestinal type. She was managed with radiotherapy and low molecular weight heparin.

BACKGROUND

Neck lumps are a common presenting symptom to ear, nose and throat (ENT) specialists. It is important to have an appreciation for conditions outside of the specialty that can present in this way, to allow for timely diagnosis and management of these problems. Discovery of an internal jugular venous thrombosis should prompt further investigation as to the underlying cause.

CASE PRESENTATION

A woman aged 69 years with a medical history significant only for osteoporosis presented to the otorhinolaryngology team with a 2-week history of left-sided neck swelling. On further questioning, she described a month history of sore throat, with 2 weeks of worsening dysphagia and odynophagia. She felt systemically well though had a poor appetite and night sweats. She did not describe weight loss. She had no infective symptoms, no change in bowel habit and no urinary symptoms. She felt her voice was slightly hoarse, but had no airway trouble at any point. Her only medication was risperidone, and she felt that her symptoms were a side effect of this medication. She was a non-smoker and drank very little alcohol. There was no family history of note, though sadly her husband died 2 years previously of head and neck malignancy.

On examination, she appeared well but cachectic, with no airway compromise. She had a 3 cm firm, tender, fixed lump at levels II and III on the left side of her neck which was not pulsatile or fluctuant and had no skin changes. There were no other neck masses. Nasendoscopy was normal, as was chest examination. Her abdomen was soft with no organomegaly.

INVESTIGATIONS

Blood tests revealed an iron deficiency anaemia with normal lactate dehydrogenase. C reactive

protein and erythrocyte sedimentation rate were mildly raised.

She underwent a CT neck and thorax that day. This showed a left internal jugular vein thrombus with a non-occlusive clot extending into the left brachiocephalic vein (figure 1). It also found marked gastric wall thickening with intragastric soft tissue that was highly suspicious for malignancy. Further to this, multiple pulmonary emboli were seen along with a 9×10 mm lymph node lateral to the descending thoracic aorta, which was felt likely to be malignant. There were further nodes in the left lower neck and supraclavicular fossa.

A CT abdomen/pelvis was arranged following these findings (figure 2). This revealed a 4 cm polypoidal mass lesion arising from the superior aspect of the gastric fundus with mural thickening at the pylorus. Multiple abnormal lymph nodes were noted throughout the abdomen, as well as a cutaneous nodule within the midline of the epigastrium—the report questioned whether this could be an early example of a Sister Mary Joseph nodule.

Oesophagogastroduodenoscopy found a haemorrhagic fundal polypoidal tumour at 40–48 cm from the incisors. Biopsies showed this to be a moderately differentiated invasive gastric adenocarcinoma, Lauren's intestinal type, with some surface micropapillary features and evidence of small vessel invasion. HER2 stain was negative.

Figure 1 CT neck and chest, coronal view, demonstrating left internal jugular venous thrombosis.

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Figure 2 CT abdomen, axial view, demonstrating marked gastric wall thickening and mass in keeping with gastric malignancy.

DIFFERENTIAL DIAGNOSIS

Internal jugular venous thrombosis may present insidiously, or, as in this case, as a new neck lump. In the latter case, other causes of neck lumps should be considered. Imaging of the lump can aid differentiation following history and examination.

TREATMENT

This patient received treatment-dose low molecular weight dalteparin to treat her internal jugular venous thrombosis and pulmonary emboli. She required blood transfusions on two separate occasions, as well as an iron transfusion for her iron deficiency anaemia. She was referred from the ENT surgeons to the gastroenterologists, and onwards to oncology, once her diagnosis was confirmed. It was felt she had incurable metastatic disease, with a prognosis of perhaps <6 months (though this does not factor in the high haemorrhage potential). She began radiotherapy treatment on an urgent basis because of the haemorrhagic nature of her tumour; 20 Gy in 5 fractions over 1 week. She was put in contact with the palliative care team.

OUTCOME AND FOLLOW-UP

At the time of writing, 2 months following diagnosis, the patient was undergoing radiotherapy and continued on low molecular weight heparin injections.

DISCUSSION

Internal jugular venous thrombosis is an uncommon condition in which intraluminal thrombus forms within the internal jugular vein. It may occur spontaneously or as a complication of head and neck infection, malignancy or surgery; central venous catheterisation; polycythaemia; hyperhomocysteinaemia; neck massage and intravenous drug use.¹

Presentation includes pain and swelling in the neck, often at the angle of the jaw and over the sternocleidomastoid. Complications include pulmonary embolism, infection, superior vena cava syndrome, superior sagittal sinus thrombosis and airway obstruction from laryngeal oedema.²

If suspected, ultrasonography is a suitable first-line diagnostic investigation; a dilated, incompressible vein, intraluminal clot and no response to Valsalva suggest underlying thrombosis. Doppler can demonstrate flow changes. Ultrasound offers poor image quality below the clavicle and mandible.^{1 3} Contrast-enhanced CT can demonstrate a low-density intraluminal thrombus with soft tissue swelling around the vein, and

distended internal jugular proximal to the thrombus. MRI is also of use, offering greater soft tissue contrast.¹

Once the diagnosis of internal jugular venous thrombosis is confirmed, investigation into the underlying cause should be initiated. This may involve further imaging, laboratory tests and endoscopic examination. In some cases, such as head and neck malignancy, and in our patient who underwent a CT neck and chest, the causative pathology may be identified along with the thrombus. Management of the condition relies on treating the underlying cause, and with anticoagulant therapy.

A number of case reports have linked internal jugular venous thrombosis with systemic malignancy. Similar to our case above, a report in 2008 identified internal jugular venous thrombosis in a man aged 46 years with neck swelling and dysphagia; further work-up revealed an occult gastric carcinoma.⁴ Similarly, a 2007 report described a man aged 53 years with a diagnosis of central venous thrombosis and underlying gastric adenocarcinoma with distant metastases. He initially presented with right-sided neck swelling.⁵ The condition has also been reported in younger patients with final diagnosis of non-Hodgkin's lymphoma⁶ and in a patient where, as was the case with our patient, the neck swelling was the first evidence of malignancy (in this case, metastatic lung cancer).⁷

Otorhinolaryngologists frequently see patients with neck lumps, and this case serves as a reminder of a more unusual cause with an origin not related to the specialty. Specialists should be aware of conditions that may present to them despite being outside of their usual remit, and involve the relevant team when required. A thorough history and examination can elicit suggested symptoms and signs that may point towards a systemic condition, prompting early investigation as to the cause.

In conclusion, we have presented a patient presenting for the first time with a new neck lump and underlying diagnosis of gastric adenocarcinoma, with no previous suspicion for malignancy. Internal jugular venous thrombosis is an uncommon condition, which may be due to an underlying malignancy—local and systemic. The finding of a jugular venous thrombosis should prompt urgent investigation as to the provocative pathology. Specialists should be wary of the need for a thorough history and examination in patients presenting to their service who may have a systemic problem.

Learning points

- ▶ Internal jugular venous thrombosis is an uncommon condition which can present as a neck lump.
- ▶ Causes include infection, malignancy (local and systemic), surgery, central venous catheterisation, polycythaemia and intravenous drug use.
- ▶ Ultrasonography is the ideal first-line diagnostic intervention, with CT a suitable alternative.
- ▶ Once identified, investigation into the underlying cause should be initiated.

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Competing interests None declared.

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REFERENCES

- 1 Mueller DK, Dacey MJ. Internal jugular vein thrombosis. Medscape. 2016. <http://emedicine.medscape.com/article/461577-overview> (accessed 30 Nov 2016).
- 2 Modayil PC, Panthakalam S, Howlett DC. Metastatic carcinoma of unknown primary presenting as jugular venous thrombosis. *Case Rep Med* 2009;2009:938907.
- 3 Lordick F, Hentrich M, Decker T, *et al*. Ultrasound screening for internal jugular vein thrombosis aids the detection of central venous catheter-related infections in patients with haemato-oncological diseases: a prospective observational study. *Br J Haematol* 2003;120:1073–8.
- 4 Stern-Sträter J, Hörmann K, Neff W, *et al*. [Internal jugular vein thrombosis as a paraneoplastic syndrome]. *HNO* 2008;56:325–7.
- 5 Liu KT, Chan HM, Lin TJ. An unusual presentation of metastatic gastric adenocarcinoma—acute onset of right neck swelling. *J Formos Med Assoc* 2007;106:589–91.
- 6 Shameem M, Akhtar J, Bhargava R, *et al*. Internal jugular vein thrombosis—a rare presentation of mediastinal lymphoma. *Resp Med CME* 2010;3: 273–5.
- 7 Di Micco P, Coppola L, Diadema MR, *et al*. Internal jugular vein thrombosis as first sign of metastatic lung cancer. *Tumori* 2003;89:448–51.

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