

Comment on: Current Concepts in the Management of Carotid Body Tumours

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Dear Editor,

I read with interest the recently published article by Wee and Goh titled as above¹. I would like to congratulate the authors who were willing to share their experience in the management of carotid body tumours.

Preoperative embolization has played a major role in the devascularization of carotid body tumours prior to surgery. There are two currently approved methods to achieve this, which is a superselective transarterial endovascular embolization and a direct percutaneous injection of embolic materials^{2, 3}. Superselective transarterial endovascular embolization has potential limitations especially in lesions with a complex angioarchitecture, with small feeding vessels and branches arising from internal carotid and vertebral arteries³. This will result in an incomplete devascularization of the tumour resulting in increase intraoperative blood loss. A direct percutaneous injection has the potential to overcome all these limitations. Quadros et al first reported a successful near complete preoperative embolization of a cervicodorsal paraganglioma with a direct percutaneous injection of onyx with endovascular delivery of particles in 2007³. In a larger series, Ozyer *et al* had a success in 10 patients, in which 4 patients only had a direct percutaneous injection with glue or onyx and 6 patients had both direct percutaneous injection and endovascular embolization². There were no technical or clinical complications related to the procedures. Wanke et al performed a direct percutaneous embolization with onyx only in 6 paragangliomas and achieved a complete devascularization in all lesions⁴. This direct percutaneous embolization method might be useful in one of Wee and Goh's patient who didn't undergo preoperative embolization due to a small feeding vessel¹.

Various embolic materials were used in either the direct percutaneous injection method or endovascular embolization ranging from particles (PVA)⁵, glue² or onyx^{2, 4}. However currently onyx had been increasing being used in most centres. Onyx has the advantage of a slow distribution like a lava flow into the entire tumour either ante and retrograde flow which will embolized all the feeding arteries either from the external or internal carotid arteries⁴. This will ensure a complete devascularization of the tumour. Wanke et al had achieved this in 6 paragangliomas by using solely onyx combined with a non detachable microballoon to protect the internal carotid artery⁴.

In view of this, the selection of preoperative embolization method and embolic material in the preoperative devascularization of carotid body tumours will depends on the angioarchitecture of the tumour itself.

Thank you.

KEY WORDS:

Carotid body tumour, Paraganglioma, Embolization, Onyx

REFERENCES

- 1 Desmond THW, Goh CHK. Current Concepts in the Management of Carotid Body Tumours. *Med J Malaysia* 2010; 65: 268-71.
- 2 Ozyer U, Harman A, Yildirim E, Aytakin C, Akay TH, Boyvat F. Devascularization of head and neck paragangliomas by direct percutaneous embolization. *Cardiovasc Intervent Radiol* 2010; 33: 967-75.
- 3 Quadros RS, Gallas S, Delcourt C, Dehoux E, Scherperel B, Pierot L. Preoperative embolization of a cervicodorsal paraganglioma by direct percutaneous injection of onyx and endovascular delivery of particles. *AJNR American journal of neuroradiology* 2006; 27: 1907-9.
- 4 Wanke I, Jäckel MC, Goericke S, Panagiotopoulos V, Dietrich U, Forsting M. Percutaneous embolization of carotid paragangliomas using solely Onyx. *AJNR American journal of neuroradiology* 2009; 30: 1594-7.
- 5 White JB, Link MJ, Cloft HJ. Endovascular embolization of paragangliomas: A safe adjuvant to treatment. *Journal of Vascular and Interventional Neurology* 2008; 1: 37-41.

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