

Troublesome bleeding at mediastinoscopy

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We present in this video a case of troublesome bleeding at mediastinoscopy. Video Mediastinoscopy is a vital part of the pre-operative evaluation of patients prior to lung resection. A full staging mediastinoscopy with lymph node sampling from stations 2L, 2R, 4L, 4R, and 7 are key to competent staging and for the avoidance of lobectomy or pneumonectomy in patients with N2 disease for which there is little or no benefit with surgery alone (1,2).

The case presented in the video is just such a case, with a 67 years old patient who has a right upper lobe T2aN0M0 adenocarcinoma. The PET scan was negative in the mediastinum but we embarked on a staging mediastinoscopy for the reasons highlighted above.

Surgeons will often be most concerned about accidental biopsy of the major vessels including the innominate artery anteriorly, superior vena cava on the right, the left and right pulmonary artery distally, or the aorta to the left, but often the most troublesome bleeding does not come from these major structures. For example, bleeding may occur an exception to that comes when a malignant lymph node has eroded through a major structure and thus pulling on the node disrupts the structure behind which there is an already weakened vessel wall. Thus extra caution should be taken when the mediastinoscopy is performed to confirm already suspected established or extensive N2 disease rather than to look for micrometastases.

One additional caution is paid to the azygous vein. This vessel joins the SVC from posteriorly and it lies close to the 4R lymph nodes.

In this video, all these structures were easily identified and avoided. However, a very large bronchial artery was

encountered, which in our experience causes troublesome bleeding much more often than the major structures.

We note that with some additional aforementioned equipment available and some experience, these can often be successfully addressed without resorting to sternotomy.

In our case, early efforts were made to avoid the bronchial artery but as we were reaching over this artery to reach station 7 it started to bleed, perhaps at the site of a side branch to it. We used the suction diathermy to control it initially and then placed and adrenaline soaked swab over it to attempt to vasoconstrict the vessel. While waiting for the adrenaline soaked swab to work, we continued the mediastinoscopy, taking samples from 4R and 4L.

On removal of the swab, the vessel was still bleeding significantly. But during that time we had brought into theatre a 5 mm endoscopic clip applicator which fits easily down the mediastinoscope. Then, using the suction diathermy to control the bleeding, we eventually managed to achieve hemostasis with a 5 mm clip. We continued with the procedure and took samples from station 7 before exiting the mediastinum, leaving behind a surgical haemostat for further haemostasis.

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