Reminder of important clinical lesson

Port-a-cath embolisation to pulmonary artery

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Summary

Intravascular embolisation of catheter, a relatively uncommon event associated with the use of totally implanted port devices, can have serious cardiovascular, pulmonary and septic complications with an overall mortality of 1.8%. Here, the authors report an asymptomatic patient with pulmonary artery catheter embolisation diagnosed incidentally in a positron emission tomography scan who underwent successful percutaneous extraction of the catheter in an attempt to avoid the possible dreadful complications.

BACKGROUND

With an increasing burden of cancer and other chronic diseases, totally implanted port devices are increasingly used for intravenous administration of drugs and fluids, parenteral nutrition and sampling of blood. Although they have solved the problem of difficult venous access, their use is associated with several complications including intravascular embolisation.¹ Here, we report a case of catheter embolisation to pulmonary artery diagnosed incidentally on a positron emission tomography (PET) scan. Lack of symptoms and delay in the diagnosis of such potentially dangerous condition can result in serious complications.

CASE PRESENTATION

A 63-year-old man was referred to emergency after an incidental discovery of catheter embolised to pulmonary artery on a staging PET/CT scan (figure 1). Patient denied any symptom and had no history of trauma. He had a history of rectal adenocarcinoma invading internal anal sphincter diagnosed 6 months ago, hypertension and left

inguinal hernia repair. He had undergone placement of right subclavian port-a-cath 4 months ago (using modified Seldinger technique) which was last used 3 months ago for administration of neo-adjuvant chemotherapy.

Physical examination revealed a blood pressure of 159/84 mm Hg, pulse of 89/min, respiratory rate of 18/min and normal temperature. Patient had a port on his right chest wall. Rest of the physical examination was unremarkable.

INVESTIGATIONS

He had white cell count of 3500/ μ l, haemoglobin of 14.5 g/dl, platelet count of 125 000/ μ l and normal electrolytes, renal and liver function tests. Chest x-ray showed abandoned port within the right chest wall and catheter embolisation to pulmonary artery (figure 2).

TREATMENT

Patient underwent limited pulmonary artery angiogram via right femoral vein approach which showed catheter wedged between the right pulmonary artery and the main

Figure 1 Positron emission tomography-CT scan image showing catheter in the pulmonary artery.

Figure 2 Frontal chest x-ray showing abandoned port and catheter separate from the port (white arrow).

Figure 3 Limited pulmonary angiogram showing catheter in the pulmonary artery.

pulmonary artery. A 22 cm long catheter was retrieved under fluoroscopic guidance using goose snare (figure 3 and 4).

OUTCOME AND FOLLOW-UP

At 2 months follow-up after discharge, the patient is doing well and does not have any complaint.

Figure 4 Fluoroscopic image showing catheter retrieval using a goose snare.

DISCUSSION

Intravascular embolisation of port-a-cath is a relatively uncommon event with an incidence rate varying from 0.2% to 4.2%.²⁻⁴ This occurs as a result of catheter fracture (involving infraclavicular region: pinch off syndrome-40.9% and proximal or distal portion-11.6%), damage during explantation or exchange (17.7%), or separation of

the port chamber and cannula portion (10.7%).¹ In 19.1% of cases the mechanism of catheter fragmentation is not identified. These catheter fragments most commonly embolise to pulmonary artery and this can be asymptomatic,¹ as in our patient. This lack of symptoms can cause a delay in diagnosis from 10 days to 25 years.^{5 6} However, the embolisation can eventually cause symptoms including arrhythmias (8.1%), cough, dyspnoea, chest pain (6%) and septic complications (2%).¹ It is also rarely associated with pulmonary artery pseudoaneurysm which can also present as dyspnoea and haemoptysis.⁷ Catheter embolisation has an overall mortality of 1.8% which is a significant decrease from the past. This is the result of the availability of more flexible and resilient catheters.¹

Embolised catheter fragments are most commonly extracted using percutaneous interventional techniques which represent the gold standard for the removal of intravascular foreign bodies in the venous system.^{8 9} A small proportion of catheter fragments can, however, become adherent to the vessel wall.¹ There is only a single case report of prolonged observation of a catheter fragment lodged in a central intravascular location.¹⁰ The consensus is to surgically remove the catheter fragments in all cases if percutaneous techniques fail because of the fear of long-term risk of complications.¹

Learning points

- Physicians should be aware of pulmonary artery catheter embolisation even in the absence of any symptom.
- This needs urgent percutaneous extraction to prevent potentially life-threatening complications.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Bhatt VR, Gupta S, Lowry J, Dhar M. Port-a-cath embolisation to pulmonary artery. *BMJ Case Reports* 2011;**10**:1136/bcr.06.2011.4303, date of publication

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