

Foreign Body in the Main Pulmonary Artery

An Unusual Complication of Pudenz-Shunt

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SUMMARY

A dislodged Pudenz ventriculo-atrial shunt catheter removed from the main pulmonary artery by arteriotomy is reported in a 21-year-old man.

Additional Indexing Words:

Pudenz catheter Foreign body in the main pulmonary artery

PREVIOUSLY foreign bodies in the heart and great vessels were uncommon complications and most of these were due to gun-shot wounds.^{1),2)} Concurrently with the increasing use of diagnostic and therapeutic catheters, a number of complications have been published.^{3),4)} Most frequently the foreign bodies were polyethylene catheters, guide wire tips and rarely Pudenz catheter of ventriculo-atriostomy shunting devices used in the treatment of hydrocephalus.³⁾⁻⁷⁾

Long et al⁷⁾ first reported such a complication of Pudenz shunt in 1964. In 1968, DeBord et al⁵⁾ reported a similar case of Pudenz catheter fragment removed from the pulmonary artery. Later, other cases of such rare complications have been published.^{3),5),6)} A similar case, diagnosed and treated in our clinic, is the subject of this article.

CASE REPORT

A. C. (910987), a 21-year-old man with arachnoiditis due to tuberculous meningitis was subjected to the placement of Pudenz ventriculo-atrial shunt on December 4, 1977. The Pudenz catheter inserted in the right external jugular vein slipped down into the superior vena cava. The chest X-rays showed that the catheter was located in the superior vena cava (Fig. 1). Later the catheter

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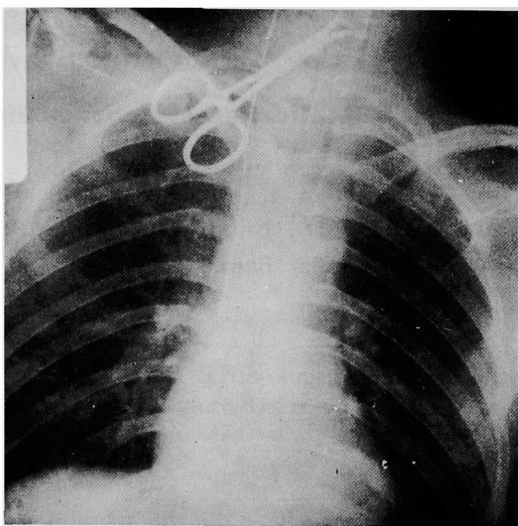


Fig. 1. Postero-anterior plain chest X-ray showing the opaque tip of the catheter.

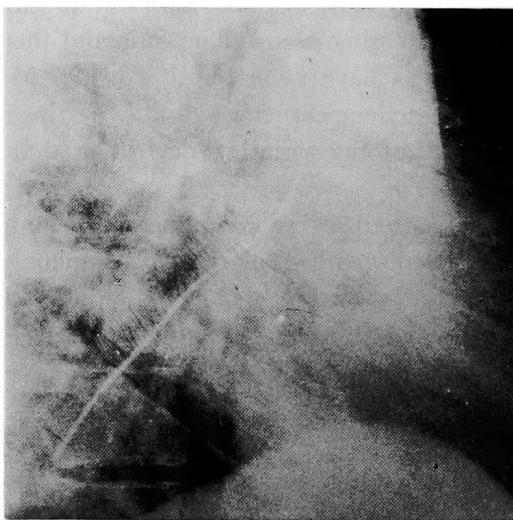


Fig. 2. Right lateral plain chest X-ray displaying the opaque tip of the catheter.

migrated the right atrium, the right ventricle and finally dislodged in the main pulmonary artery (Figs. 2, 3). On December 5, 1977 the chest was opened with median sternotomy. Two tapes were placed around the main pulmonary artery, then traction sutures were inserted on the pulmonary artery. The soft Pudenz catheter was palpated in the artery, and after the catheter was fixed with a Satinsky clamp, the pulmonary artery was opened with a longitudinal incision with a length of less than 1 cm. A forceps was introduced through the arteriotomy and the

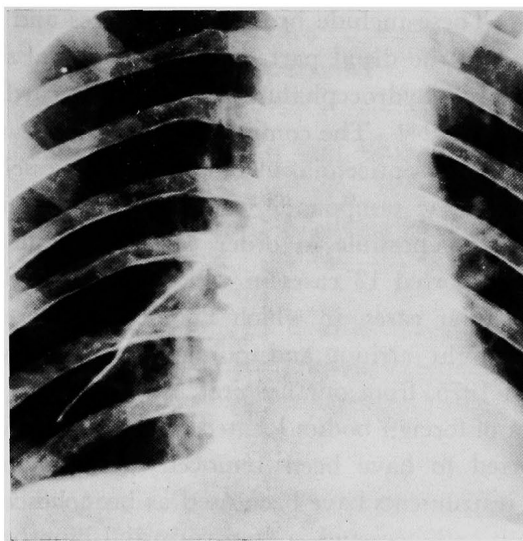


Fig. 3. Postero-anterior plain chest X-ray showing the opaque tip of the catheter in the right and main pulmonary artery.

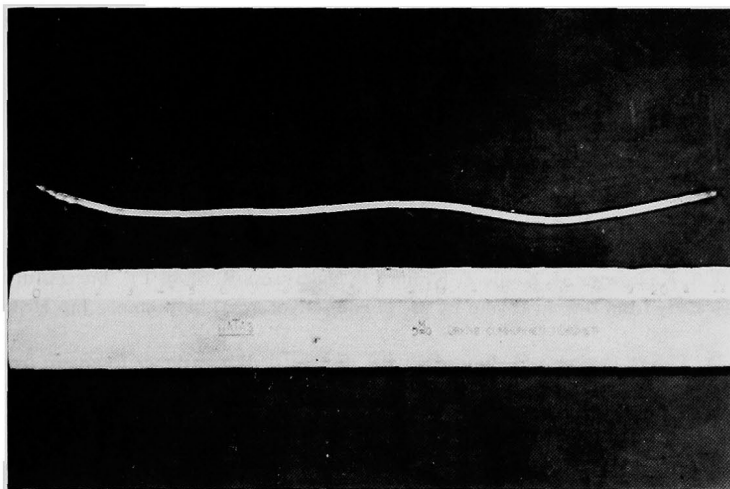


Fig. 4. The removed catheter.

catheter was easily removed (Fig. 4). The pulmonary arteriotomy was closed with 5/10 silk sutures. The pericardium and chest were closed in the usual manner following insertion of a retrosternal drainage tube. At the end of the operation ventriculo-atriostomy shunt was performed by the neurosurgeons.

DISCUSSION

With the increased use of invasive diagnostic measures in cardiology, various kinds of foreign bodies in the heart chambers and large vessels have

been reported.^{3),4)} These include broken guide wires and pacemaker catheters. Dislodgement of the distal part of ventriculo-atrial shunts used in the treatment of congenital hydrocephalus results in free cardiac or pulmonary arterial foreign bodies.^{5),7),8)} The complications of these catheters are thrombosis, embolus, infection, septicemia, ulceration of the vessel wall, penetration myocardium, and cardiac tamponade.^{3),4),9),10)} Such foreign bodies should be removed as soon as possible in order to prevent these complications.⁴⁾ Harken and Zoll³⁾ reported 13 cases in which foreign bodies were removed surgically. Two similar cases, in which Pudenz catheters were successfully removed from the right atrium and pulmonary artery were reported by Saylam et al^{6),7)} in 1975, from our hospital.

Few instances of foreign bodies located in the cardiac chambers or large vessels were reported to have been removed without major surgery.^{3),11)} Therefore various instruments have been used as bronchoscope, ureteric stone catheter, snare loop catheter, and endo-myocardial biptome.^{3),11)}

Surgical removal is the treatment of choice. Pulmonary arteriotomy or cardiectomy, with or without hypothermia and open-heart surgery using extracorporeal circulation, are the methods applied in surgical practice.⁵⁾⁻⁸⁾

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