New ideas - Thoracic oncologic

Left paraxiphoidian approach for drainage of pericardial effusions

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Received 7 May 2009; received in revised form 25 August 2009; accepted 27 August 2009

Abstract

Pericardial effusion is one of the frequent complications of malignancies, up to 15–20% of the autopsy specimens showing pericardial or cardiac metastasis. Often the pericardial fluid accumulates in large quantities leading to cardiac tamponade, which can be fatal in the absence of appropriate treatment. The authors present another type of pericardial drainage: the approach is paraxiphoidian, not subxiphoidian or with xiphoid resection. Without xiphoid process resection, the surgery is better tolerated by patients (frequently the drainage is made under local anesthesia). In the case of xiphoid preservation, the surgical intervention is easier (no need for hard retraction of the bone). In all the five cases with this access, the postoperative results were very good, with complete evacuation of pericardial effusion. In all the cases, the pericardial biopsy performed under visual control was sufficient for a histological diagnosis and the immunohistochemical tests, if required.

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Keywords: Subxiphoid pericardial window; Cardiac tamponade; Neoplastic pericardial effusion

1. Introduction

Pericardial effusion is one of the frequent complications of malignancies, up to 15–20% of the autopsy specimens showing metastasis at the pericardial or cardiac level [1]. Often the pericardial fluid accumulates in large quantities leading to cardiac tamponade, which can be fatal in the absence of appropriate treatment. In most of the cases, minimal invasive pericardial fluid drainage is enough to improve the symptoms in these critically ill patients. This can be achieved either through percutaneous subxiphoidian approach or via minimal invasive surgery, like subxiphoidian of trans-pleural pericardial window.

It should be noted that fine line blood pressure in these patients is maintained by increased sympathetic tonus, which will augment cardiac inotropic response and peripheral vasoconstriction [2]. It is known that during general anesthesia induction there is a sympatholytic effect which usually decompensates the patient, and for this reason it should be avoided for surgical intervention. In most of the cases, the subxiphoidian pericardial drainage is done under local anesthesia only.

2. Technique

The first to describe the subxiphoidian pericardial drainage technique was Larrey in 1829 [3]. In 1900, Allingham [4] started to popularise the procedure, but it was Fonte-
Between October 2006 and July 2008, five patients with pericardial effusion were surgically treated by this procedure. In two cases, the pericardial disease appeared in patients with malignancies (bronchopulmonary cancer under chemotherapy). These two cases were surgical emergencies (pericardial effusions with cardiac tamponade), the pericardial biopsy confirming the pericardial malignancies: the same histological type as the pulmonary epidermoid lesion.

In the other three cases, the patients were diagnosed with pericardial effusion with long time evolution, without medical response to conservative treatment. In these situations, the endoscopic visual pericardial exploration was helpful, the biopsy excluding any pericardial malignancies. In all the five cases, the endoscopic pericardial evaluation was very good and the pericardial fragment was sufficient for histopathological and immunohistochemical study. There were no difficulties during surgery and despite using local anesthesia, intra- and postoperative chest pain was minimal.

3. Comment

We consider that this novel technique offers certain advantages over the classical approach:

1. It gives the possibility to make the pericardial drainage without being inaccommodated by the xiphoid process and does not require its resection (as we have mentioned before, this procedure is often done under local anesthesia and resection of this bone fragment can be very painful);
2. Although there is the possibility of subxiphoidian approach without the resection of the xiphoid process, we consider that in the paraxiphoidian approach access is done in the place of maximum convexity of the pericardium in tension; there is no need to ‘avoid’ the xiphoidian process, access to pericardium being facilitated due to the use of the shortest way to it;
3. The surgical intervention can be safely and comfortably done under local anesthesia in these critically ill patients;
4. We have not seen any hemorrhagic incidents during intervention (the closest vessels, the anastomoses between the inferior epigastric and left internal mammarian blood vessels are at a distance of approximately 1 cm);
5. The approach site is far away from the pleural spaces and there is no danger to accidentally open them.

References


eComment: Pericardiocentesis followed by intrapericardial cisplatin administration in patients with neoplastic pericarditis

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doi:10.1510/icvts.2009.211250A

We read with great interest the article by Motas et al. concerning a novel surgical technique for drainage of pericardial effusions. We would like to congratulate them for their very good results [1].
The aim of our brief comment is to highlight the advantages of pericardiocentesis followed by intrapericardial cisplatin administration in patients with neoplastic pericarditis. Malignant involvement of the pericardium is not uncommon especially in patients with advanced lung cancer and is related to the mechanism of mortality in one-third of the cases [2]. Increase in pericardial fluid may cause life-threatening cardiac tamponade in patients with satisfactory survival prospects.

The acute treatment of malignant cardiac tamponade involves prompt, complete removal of pericardial fluid by pericardiocentesis or surgical intervention, but recurrence of malignant pericardial effusion and subsequently tamponade is not unusual. Therapeutic strategies remain controversial. In our centre, we favor pericardiocentesis and subsequent cisplatin instillation as the method for preventing recurrence of malignant pericardial effusion, especially in patients with lung cancer. Our results were documented during a 5-year period study [3].

Pericardiocentesis followed by intrapericardial administration of cisplatin is safe and effective in preventing the reaccumulation of malignant pericardial effusion in the majority of oncology patients.

References