ABSTRACT A Laparoscopic means of treating malignant pericardial effusion is implemented and compared with other approaches for management of this condition. Laparoscopic pericardial fenestration was performed in a 68 year old man with bronchogenic carcinoma and recurrent pericardial effusion. The procedure took 45 minutes and no complications were observed. We feel that laparoscopic trans-diaphragmatic pericardial fenestration is an alternative to percutaneous drainage in the management of malignant pericardial effusion. 

Keywords: laparoscopy, pericardial effusion, tamponade, pericardiectomy

Introduction
Malignant pericardial effusion causes annoying symptoms that may be difficult to palliate. Percutaneous drainage allows a short term relief of tamponade but effusions may re-accumulate.
Pericardial fenestration offers a definitive solution but its use in patients with malignant disease has been limited by the need for laparotomy or thoracotomy, which is often unacceptable in such patients. A new laparoscopic approach to eliminate the problem was performed for the first time in the United Kingdom and has, ever since been performed, in other centers. (1,2)

Case Report
A 68 year old man was admitted with a 9 month history of bronchogenic carcinoma. On admission, he had hypotension, raised jugular venous pressure, and pericardial rub. A large pericardial effusion was confirmed ultrasonically. Under ultrasound guidance a pericardial drain was inserted via the perixiphoid approach and 150ml fluid was aspirated, but the effusion recurred and the continued to be dyspneic after even slight exertion. Cytological examination of pericardial fluid did not reveal any malignant cells. To avoid future recurrence of pericardial effusion, a laparoscopic trans-diaphragmatic pericardial fenestration was done.

Method
Under general anesthesia a standard pneumo-peritoneum was introduced. A 10mm laparoscopy trocar was placed below the umbilicus for the camera. Two other 5mm trocars were introduced through the left and right upper abdomen along the mid-clavicle line for
Abdominal exploration was done and no intra abdominal evidence of malignancy was seen. The area of the bulging pericardium just to the left of the falciform ligament, where the central tendon of the diaphragm joins the pericardium, was seen. With the patient in Trendelenburg position, 200ml of yellow fluid was aspirated, and a 3x2 cm window was made with scissors and electro surgery which resulted in a gush of fluid into the peritoneal cavity. Pericardioscopy was done through the pericardial window and deposits were seen on both visceral and parietal pericardium. The patient did well after this procedure which took only 45 minutes. He had no problems from the laparoscopic procedure, was pain-free, and was sufficiently mobile to be discharged home the same day.

**Discussion**

This new laparoscopic approach was performed for the first time in the United Kingdom by Mayer2 in 1993. The authors feel that this procedure might be considered for pericardial effusions of all natures. It should be noted that pericardiocentesis, although simple, tends to be a temporizing measure only. The trans-thoracic approach requires a painful incision and a chest tube. The trans-abdominal approach also requires a painful incision and long recovery. Thoracoscopy has also been performed but requires double lumen endotracheal tubes and chest tubes. We feel that laparoscopic transdiaphragmatic pericardial window is a promising method. Although this is a novel and interesting approach, it must not be attempted without adequate laparoscopy experience.

**Reference**
