Intra-operative trans-oesophageal echocardiography is a potential source of sepsis in the intensive care

Simon W. MacGowan*
Cardiac Surgical Unit, Royal Victoria Hospital, Grosvenor Road, Belfast BT12 6BA, Northern Ireland, UK

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I read with interest the recent letter from Jougon and colleagues [1] on oesophageal perforation after trans-oesophageal echocardiography (TOE) and agree completely with their recommendations but feel they neglected to mention one important group of patients. TOE is also used increasingly both during and after cardiac surgery and, although reported complications are low [2], sepsis may be the only clinical sign of oesophageal perforation in the group of patients who remain ventilated. To illustrate, a 64 year old male with no previous history of oesophageal nor respiratory disease was admitted with an inferior myocardial infarction and an inferior ventricular septal defect (VSD) with a 5:1 (Qp/Qs) shunt. The VSD was repaired with a bovine pericardial patch using the infarct exclusion technique reported by the Toronto group [3]. A TOE probe was introduced into the oesophagus after induction of anaesthesia by an anaesthetist who is experienced in TOE and the procedure was uneventful. The post-operative course was complicated from the outset by sepsis the source of which was thought to be the respiratory tract. Initially, the leucocyte count was normal but peaked by the 18th post-operative day at 50 000 cm$^{-3}$. A repeat TOE was performed on the 7th post-operative day by a different but equally experienced anaesthetist. The patient gradually deteriorated, developed renal failure requiring haemodialysis by the 8th day following surgery and died from overwhelming sepsis 19 days after surgery.

A post-mortem examination revealed a 2 × 3 cm area of recent oesophageal ulceration with a fistula leading to the left main bronchus as well as heavily consolidated lungs and pyelonephritis. The VSD repair was intact.

The diagnosis of an iatrogenic oesophageal perforation following TOE is difficult in the ventilated intensive care unit patient as uncontrolled mediastinal or pulmonary sepsis may be the only diagnostic clue. Successful treatment requires early intervention and oesophagoscopy should be performed early in patients with sepsis and no obvious cause following an intra-operative TOE. The definitive treatment of oesophageal perforation is surgical.

If an intra-operative TOE is anticipated, careful pre-operative screening for a history of oesophageal disease is mandatory. Following an intra-operative TOE if sepsis is suspected then it is essential that the oesophagus is excluded as the source of the sepsis. Failure to recognize this type of oesophageal injury early will almost certainly be fatal.

References