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CORRESPONDENCE

Treating cardiac surgery emergencies: the role of the noncardiac anaesthetist in the first 30 min

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Editor,

Treating a cardiac emergency is extremely challenging, especially for noncardiac anaesthetist with limited experience in this specific field. In surgical patients with complex cardiac diseases undergoing noncardiac surgery or in the intensive care unit, a cardiac anaesthetist might be helpful for consultation. In some institutions, a cardiothoracic anaesthesia consultation service (CACS) has been introduced to help colleagues with less experience in these patients.[1,2] However, for cardiac patients with acute emergencies and the need for urgent intervention, initial management might have to be performed by a noncardiac anaesthetist. Urgent preparatory steps are immediately required with the available resources. Cardiac anaesthetists should help these colleagues know what is required.

Imagine you are the noncardiac anaesthetist in charge and you receive the information that an unstable patient with suspected dissection of the aorta will arrive in few minutes. Your mind starts racing and a little voice in your head says 'it might not really be so bad, maybe it is a false alarm'. This option is quickly banished as a visibly critical patient arrives in the emergency room. The patient has an oxygen mask on a round, bloated, grey-skinned distressed face with virtually no neck, strangely enough though with prominent external jugular veins. The patient is tachypnoeic, tachycardic and has a last noninvasive blood pressure of 80/40 mmHg despite epinephrine running together with an infusion through a small peripheral intravenous cannula. The patient is cold and clammy and, despite some degree of disorientation, the fear in his eyes shows that he grasps the seriousness of the situation on some level. Just as the paramedics ask if everyone is present for handing over the patient, a cardiac surgeon bursts into the room and says he has just seen the patient's external computed tomography scan confirming a type A aortic dissection with pericardial tamponade and you have to get the patient into the theatre immediately. Your mind is still racing between wanting to hand over the case to the cardiac anaesthetist, scrambling to think of next steps, and try to remember the advice given years ago by your former mentor during your rotation in cardiovascular anaesthesia: 'the most important thing is to give heparin…'. The paramedic clears her throat and begins to hand over the patient – and so it begins.

In the late evening or early morning hours, in the majority of hospitals, a cardiac anaesthetist may not be personally present so that in a clinical scenario as described above, the initial patient care has to be started by a colleague less experienced in cardiac anaesthesia. In some cases, it is even possible that the patient is already on extracorporeal circulation when the cardiac anaesthetist arrives in the theatre. It is therefore all the more important that noncardiac anaesthetists know some basic principles of cardiac anaesthesia to allow for the management of cardio-vascular life-threatening emergencies.

In a nutshell, our group of senior cardiac anaesthetists believes that in addition to routine basic care initial management by the noncardiac anaesthetist should include at least the following seven tasks: ensure that the cardiac anaesthesia team, surgeon, perfusionist and intensivists have been informed; ensure that red blood cell compatibility testing is initiated and uncrossed matched erythrocytes are readily available for emergency use (e.g., aortic rupture); in addition to the usual medical history, also provide essential information about the cardiovascular system, e.g. previous heart pathology and medications (beta blockers, antihypertensives, anticoagulation, etc.); establish invasive blood pressure monitoring, large bore peripheral venous access, and central venous access for vasoactive drug administration; document neurological status clinically (GCS, pupils, orientation, etc.) and – if inducing anaesthesia – monitor depth of anaesthesia to avoid overdosing with anaesthetic agents with unfavourable haemodynamic adverse effects and to reduce the risk of awareness in the absence of classical signs during on-pump surgery (e.g. arterial hypertension, tachycardia, increase in airway pressure, etc.); before surgery starts administer appropriate drugs, an antibiotic (usually a cephalosporin) and, most importantly, with guidance from the perfusionist administer unfractionated heparin (usually 400–500 IU kg^{-1} body weight) a few minutes

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before the initiation of extracorporeal circulation. In general, it makes sense to be familiar with institutional standard operating procedures in cardiac anaesthesia (when to call, where to cannulate, cannulation before or after induction, what to insert, etc.). Furthermore, concise communication from the cardiac anaesthetists is paramount. Finally, realize that patients frequently die from acute cardiac emergencies, regardless of our actions. Communicate, move fast, and prepare, but do not do anything you are not trained for or what you are not proficient in. For every measure, the premise of the Hippocratic tradition should be taken into account: 'primum non nocere, secundum cavere, tertium sanare'.

The diagnostic and therapeutic spectrum in cardiovascular medicine is developing rapidly. Cardiologists and cardiac surgeons are increasingly specialized in their clinical activity in order to meet the complex demands of their field.[3] In many countries, a spatial merger of corresponding disciplines has taken place in the form of a cardiac or cardiovascular centre. This not only enables cardiovascular care to be provided at a central location, but also an even closer interdisciplinary exchange. Patients clearly benefit from highly specialized medicine and subspecialization, which translates into improved patient care.[4–6]

In the field of anaesthesia, the corresponding efforts to recognize subspecialization are only now beginning, although accredited training programmes have been in place for many years.[7] At present, there is a demand for highly 'specialized cardiac anaesthesiologists' and also 'generalists' who will sometimes need the appropriate competency and guidance in managing cardiovascular emergencies. It is not only the professional societies that are challenged to ensure clear conditions and a sufficient number of specialists in the future, but also it is our role as specialized (cardiac) anaesthetists to support our nonspecialized colleagues in their clinical practice. One such means of information transfer is to allow them to rotate regularly to the cardiovascular suites in order to refresh their knowledge through continued education and training during regular hours. Then it's really enough if we are only able arrive in the operating theatre after 30 min. After all, we are a family!

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