or aortic regurgitation being the most common differentials for the given trace). Artifacts can distort monitoring data and visual signals which are used to make clinical decisions; therefore, the information should always be interpreted in the correct clinical context. Clinicians should be able to identify this typical mechanical artifact in unparalysed patients undergoing IONM and distinguish it from other potentially dangerous situations which it may mimic.

**Declaration of interest**

None declared.

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**Rare case of double aortic arch suspected by preoperative chest X-ray in a healthy woman**

Editor—We experienced an adult case of silent double aortic arch (DAA).

A 25-yr-old healthy woman was undergoing dental extraction under general anaesthesia. Three months previously, she had been hospitalized for 7 days due to spontaneous pneumothorax. She had no other remarkable medical history. No abnormalities were found on preoperative spirometry or electrocardiography. Chest X-ray showed a slightly narrow segment at the middle portion of her trachea and absence of the typical left aortic arch (Fig. 1). However, she had neither respiratory symptoms nor difficulty in swallowing. We re-evaluated the chest computed tomography (CT) scan obtained during her previous hospitalization. It revealed an anomaly of the thoracic aorta in which two aortic arches were present. We referred her to a university hospital for further examination, including three-dimensional CT and cardiac catheterization. The ascending aorta divided into two arches bilaterally, and each distal vessel following the formation of the aortic arch joined to form one right descending aorta (Fig. 2). The diameter of each aortic arch and the intra-arterial pressure measured at each aortic arch were not different between the two vessels. Consequently, she was diagnosed with balanced type DAA with a right descending aorta.

DAA is a congenital anomaly with a reported prevalence of < 1% among individuals with congenital heart disease. DAA is classified to three different types, namely right-dominant, left-dominant, and co-dominant (balanced), which account for 75%, 18%, and 7% of cases, respectively. Because DAA is commonly identified in childhood due to symptoms caused by vascular compression of the trachea, oesophagus, or both, this adult case of silent DAA is very rare. Although the patient currently has no symptoms, any symptom related to DAA may emerge when she becomes older and develops vascular sclerotic changes. Therefore, she is required to undergo a careful follow-up examination.

In this case, the equal sized right and left aortic arches were evident on three-dimensional CT. The left aortic arch was absent by the chest X-ray examination because it shifted medially from its original left-sided position and was concealed in the mediastinal shadows on the anteroposterior view. In
addition, the right aortic arch externally compressed the lateral wall of the trachea. However, these abnormal findings were subtle and may have been easily overlooked if we had not carefully observed the region around the central shadows. It would have been impossible to correctly diagnose this case by routine preoperative examination alone. We would like to emphasize that vigilant evaluation of the chest X-ray film is the most important initial step leading to a diagnosis of a potentially serious illness such as DAA.

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Intubation in the operating theatre using the Video-Airtraq™ laryngoscope in difficult circumstances by a face-to-face tracheal intubation technique

Editor—We have demonstrated that the Video-Airtraq™ laryngoscope (VAL; VYGON, Ecouen, France) used in difficult airway management simulation conditions, allowed fast and easy face-to-face oro-tracheal intubation (ftf-OTI) with the difficult airway manikin placed in sitting position facing the operator.1 After both manikin and clinical training, and after a clinical evaluation trial, we have incorporated VAL-ftf-OTI technique in our difficult airway management algorithm. We propose the VAL-ftf-OTI technique as a standard to elective/emergency operating theatre patients showing an inter-incisor distance or mouth aperture of >25 mm, necessitating a second tracheal intubation (re-intubation) after the first one, attempted with the Macintosh laryngoscope (ML), had been difficult, as defined by an intubation difficulty score2 (IDS) of >5, in the condition of a difficult airway management algorithm.3

Four trained clinicians were filmed during the airway management of seven adult patients. Before induction of anaesthesia, standard monitors were placed and optimal pre-oxygenation was performed. The operator stood/sat on the right side of the patient in the beach-chair/operating table (n=3) or sitting/bed (n=4) position. The video-screen was placed lateral to the patient at the level of the operator’s eyes. With FeO₂ >90%, anaesthesia was induced with sufentanil 20 μg kg⁻¹ followed 1 min later by propofol 2 mg kg⁻¹, and succinylcholine 1 mg kg⁻¹. Then, the operators followed a simple VAL soft insertion procedure in the oral cavity and pharynx. With optimal glottis view, the tracheal tube was pushed into the trachea or railroaded over an Eschmann stylet inserted first in the trachea under the control of view and blocked distally in the bronchial tree.

The airways of the seven (IDS>5) patients were rapidly, easily, and safely secured using the VAL-ftf-OTI technique. Table 1 gives details of initial difficult tracheal intubation and those of face-to-face Video-Airtraq™-assisted tracheal re-intubation with the patients placed in the beach-chair/sitting position.

This observation is spectacular in such anticipated difficult airway patients. Shortening, facilitating, and securing airway management is certainly of major interest in anticipated difficult airway patients exposed to high risk of both arterial oxygen desaturation and aspiration.

Our results are certainly linked to the skill of the four operators who performed this technique. However, such performance also results from both the characteristics of VAL over ML and the position of the patient. First, VAL blade, when compared with that of ML, has an anatomical shape and is thinner, allowing viewing the glottis (Cormack and Lehane grade of 1 and 2) with very low anatomical constraints, even in the difficult airway patients.3–5 Secondly, the necessary dexterity requested for TI with a channelled device is much lower than that of ML. Indeed, tracheal intubation using a channelled device such as the VAL requires just a single hand skill, to optimize distal blade position in the pharynx. The second hand is only used to push forward the tube charged in its channel. Thirdly, the sitting position simplifies VAL blade insertion, because it prevents tongue muscle mass falling posterior, sparing some space in the oral cavity to identify anatomy and optimally position the VAL blade. These three elements contributed to the ease of VAL-ftf-OTI technique in the difficult airway cases we report. In addition, the position of the patient permitted gravity securing the airway management by increasing pulmonary oxygen store before apnoea, reducing the risk of both regurgitation and aspiration, and reducing the possibility that pharyngeal secretions alter the view of the anatomy using VAL.

The ML requires certain positioning between the operator and the patient, in which the ML is required to be moved towards the glottis against gravity in a narrowed or collapsed pharynx. VAL allows rapid access to the trachea under the video control of view. The VAL-ftf-OTI technique eases, and secures anticipated difficult airway management in patients probably placed in the safest position for airway management. Clinical trials evaluating VAL-ftf-OTI as primary...