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The Clarus Video System stylet for awake intubation in a very difficult urgent intubation

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Abstract

Awake fibreoptic intubation (AFI) is a standard method of airway management in a case of anticipated difficult intubation. It is usually performed using flexible fibroscopes. In this report, we describe the case of a 42 year-old female patient who suffered from congenital disease producing severe deformation of the head, face, neck and chest. In this case, the AFI procedure was performed successfully using a rigid intubation stylet: the Clarus Video System. One of the advantages of rigid stylets is that they are very easy to use, and in the hands of anaesthesiologists not very familiar with fibroscope intubation, they can be an alternative to flexible fibroscopes in AFI procedures.

Key words: awake intubation, Clarus Video System, difficult intubation

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A video device for intubation recently introduced into clinical practice is the Clarus Video System (Clarus Medical, Minneapolis, MN, USA) [1, 2]. This is a rigid intubating stylet that gives a view of the entrance to the larynx on an attached colour monitor via a distal camera. It is portable, easy to use, and compared to other intubating stylets is more handy: because of the attached monitor, the operator can perform intubation in different approach sites without looking through a lens [3]. This is especially useful in patients in whom a typical approach may be difficult because of additional factors such as for example a forced semi-sitting position of the patient. The device is very easy to operate so does not require the experience needed for fibroscope intubation. This is very important in urgent and emergency situations.

We present the case of a 42 year-old woman (42 kg, 148 cm), presenting for urgent surgery because of metrorrhagia. Informed consent to publication has been obtained from the patient. Because uterus myomatosus was diagnosed, she required laparotomy under general anaesthesia with endotracheal intubation. The patient suffered from a congenital disease producing severe deformation of her head, face, neck and chest. She had a very short neck, a practically immobilised head, a mouth opening < 3 cm, chest deformation producing significant elevation of the sternum compared to the level of her face, and immobilised vertabrae because of spondylitis. Standard intubation using a laryngoscope was practically impossible. Because of the short neck, tracheotomy was very difficult to perform.

We decided to use the Clarus Video System (Fig. 1) in awake intubation as an alternative to awake fibreoptic intubation. The patient was positioned on the operating table in a semi-sitting position, and received premedication consisting of 2 mg of midazolam, and 0.1 mg of fentanyl *i.v*. The patient was given oxygen via a catheter positioned in the nasal cavity. Topical anaesthesia was used with a lidocaine spray to anaesthetise the oral cavity and pharynx. We did

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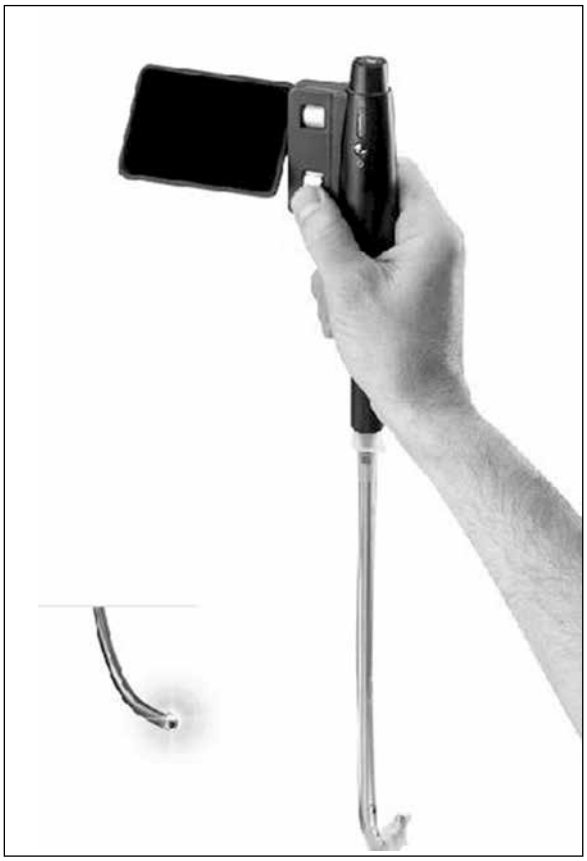

Figure 1. Clarus Video System. Source: manufactuter marketing materials

not perform local anaesthesia because of technical problems — deformation influencing anatomical landmarks.

The oxygen continuous delivery was connected to the intubating stylet (Clarus). The stylet was gently introduced into the mouth of the patient. On the first attempt, we could see only a part of the entrance of the larynx — part of the epiglottis which appeared to be positioned more to the right and higher up than in normal anatomy. The device was removed and the tip of the stylet was adjusted. The tip of the Clarus Video System stylet can be shaped to the required angle so it can be adjusted to suit a particular anatomy.

On the second attempt, the entrance to the larynx was visualised and the endotracheal tube was advanced with no resistance. At this moment, the patient received 100 mg of propofol and the general anaesthesia was continued with sevoflurane and rocuronium as a muscle relaxant. At the end of surgery, the patient received sugammadex to reverse the muscle relaxation. There were no complications in the postoperative period. The patient did not complain of discomfort in the throat.

The use of rigid fibroscopes (stylets) for awake intubation has been previously reported [4, 5]. The advantages of the Clarus stylet over other similar devices (for example BonFils) are:

1. It has an attached monitor, so does not require additional camera and monitor systems [5] if the operator prefers not to look through a lens because of a difficult approach to a patient.
2. The stylet has a malleable tip (BonFils does not), which is very useful in severe changes in anatomy.
3. There is the possibility of attaching oxygen delivery which is necessary in awake intubation. This oxygen delivery not only supports oxygenation, but also helps to remove saliva and other secretions from the view.

In conclusion, we claim that the presented case shows that the Clarus Video System stylet is a good alternative to a fibroscope for awake intubation in a case of suspected very difficult intubation.

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