Emergence agitation: is there a European consensus?

Editor—Emergence agitation is a topic of clinical interest since the introduction of sevoflurane and desflurane, and it remains one of the unanswered questions for the paediatric anaesthetist. The incidence is reported to be between 10% and 80% depending on definition and evaluation scale used. Emergence agitation, although self-limited, may require physical restraint and is a considerable source of distress for the child, the parents, and the medical staff.

We conducted an identical survey in two European countries with a different paediatric anaesthesia set-up in order to better understand the current perception and approach. After approval by the scientific committees of the Italian Paediatric Society of Anaesthesia, Analgesia and Intensive Care (SIAATIP) and the Association of Paediatric Anaesthetists of Great Britain and Ireland (APAGBI), all European members (851 in total) were invited to take part in a web-based survey consisting of 10 multiple choice questions. A total of 305 questionnaires (response rate 21%) were returned and these indicated a considerable difference among the responders from the two societies regarding their caseload. Fifty-eight per cent of responders from the APAGBI were fulltime paediatric anaesthetists compared with only 14% of the Italian SIAATIP participants. More than 50% of responders from both countries had a working experience of more than 10 yr. The personal incidence of emergence agitation was estimated <10% in both countries and half of respondents from both countries felt distressed by this phenomenon. There was a large difference regarding prevention and treatment of emergence delirium (Fig. 1). While the majority of Italy-based respondents gave midazolam as first
choice for prevention (71.2%) and treatment (49.6%) of emergence agitation, UK-based anaesthetists (58%) preferred propofol and opioids for prevention and would wait for spontaneous resolution (54.4%). Parental presence for treatment of emergence agitation was allowed in more than 60% in UK responses and more than 40% in Italian responses. The majority of Italian respondents (66%) discuss before operation the possible presentation of emergence agitation, while the majority of UK-based respondents would do so once delirium presents (46%). More than half of UK respondents identified sevoflurane as the primary cause of emergence agitation followed by pain, preschool age, and stormy mask induction, while the majority of Italian respondents gave pain as primary cause followed by sevoflurane, stormy mask induction, and the child’s temper. Prolonged crying and thrashing were considered the most important features for the diagnosis of emergence agitation in both countries.

The current survey reveals differences among European countries regarding the attitude towards, and management of, emergence agitation. However, the composition of the two paediatric societies, reflecting the degree of experience in the field of paediatric anaesthesia, makes a direct comparison difficult and any conclusions must, therefore, be drawn with great care.

The role of midazolam for emergence agitation remains controversial. While several studies report a reduced incidence of emergence agitation after midazolam premedication, others report no effect or an even increased incidence and longer lasting agitation. Treatment of emergence agitation depends also on the healthcare provider who assists the child during emergence from anaesthesia. Anaesthetists might be more prone to a pharmacological, rapid solution, while postoperative recovery nurses may choose to comfort and use parental presence to calm the child with emergence agitation. The third principal difference between respondents from the UK and Italy is timing of information given to parents. The amount of information given beforehand to the patient might depend on legal aspects of consent. Furthermore, the increasing numbers of civil claims may lead the Italian anaesthetist to a more cautious approach. Is emergence agitation to be considered as a complication of anaesthesia requiring preoperative discussion? This question and the role of midazolam (if any) for emergence agitation have to be addressed in the future.

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Solution to the challenging part of the Shamrock method during lumbar plexus block

Editor—The ‘Shamrock method’ is considered to be the standard approach for lumbar plexus block. As Sauter and colleagues have described, the most challenging part of the Shamrock method is to start with a correct puncture angle to approach the plexus. Although we can puncture the skin according to the landmark-guided method (4 cm lateral to the midline in adults) with an absolute posterior–anterior needle direction, the plexus might be located higher or lower than expected. Therefore, there might be a need to redirect the needle either laterally or medially after skin puncture in order to approach the plexus. The more deviated the angle from the original, the lesser the possibility that the ultrasound beam will be reflected back to the transducer receiver; hence, the image would be poorer. In our opinion, the best way to avoid needle angling after skin puncture is to find a more accurate needle entry point to keep the needle trajectory (from skin puncture point to the plexus) almost always perpendicular to the ultrasound beam during Shamrock lumbar plexus block.

Our solution to the challenge is fine tuning the needle entry point instead of 4 cm lateral to the midline. Without changing the original posterior–anterior needle direction, the skin is punctured at the level targeting the centre of the postero-medial quadrant of psoas major muscle, where the plexus is expected to be encountered. The distance from the bottom of the transducer to the plexus obtained in the ultrasound image (Fig. 1a) could be applied to help minimize the chance of needle redirection. This needle entry point (Fig. 1a) is suggested to create the shortest distance from the skin to the plexus and at the same time optimize the needle shaft visibility for the Shamrock method. Compared with other