Table 1 Sedation protocol for scans

	<4 years	>4 years
1st line drugs	Chloral hydrate 50–100 mg/kg (max 2 g)	Quinalbarbitone 7.5–10 mg/kg to nearest 25 mg (max 200 mg)
2nd line drugs	PR Paraldehyde 0.3 ml/kg + equal volume of olive oil (max 12 ml)	PR Paraldehyde 0.3 ml/kg + equal volume of olive oil (max 12 ml)

Table 2 Opinions of parents and children on the experience of receiving oral sedation or general anaesthesia for neuroimaging

Parents' experience	'OK'	'Bad' or 'quite bad'	Not present
Oral sedation, n=145	128 (90%)	14 (10%)	3
GA, n=69	65 (97%)	2 (3%)	2
Children's experience	**'OK'**	**'Bad' or 'quite bad'**	**Too young**
Oral sedation, n=172	31 (85%)	5 (15%)	136
GA, n=79	44 (98%)	1 (2%)	34

GA, general anaesthesia.

General anaesthesia or sedation for paediatric neuroimaging: current practice in a teaching hospital

Younger children or those with learning difficulties are generally unable to lie still for neuroimaging. There is controversy over whether anaesthesia or sedation should be used.[1 2] We describe our experience of both sedation and anaesthesia for neuroimaging between 2000 and 2004. The sedation is detailed in table 1.

A total of 297 children (median age 2 years, interquartile range (IQR) 1 year to 4 years 5 months) underwent oral sedation for neuroimaging. Twenty-eight per cent of the children had neuro-developmental disabilities. Chloral hydrate was the first drug in 64%, quinalbarbitone in 35%, paraldehyde in 0.5% and midazolam in 0.5%. A second drug was needed in 16% of cases. Sixteen per cent of children either refused or spat out part of their medication and 36% vomited. Twenty per cent required oxygen during the scan to keep saturations >92%. There was one serious adverse event: one child was hospitalised overnight with oxygen. Airway support was needed in 9%, and no child required intubation. Scans were rated as successful by the radiologist in 92%, partially successful in 7% and unsuccessful in 1.5%. In 128 children for whom we collected data, median time to wake up sufficiently to drink, eat or pass urine was 3 h 9 min (IQR 2 h 18 min to 3 h 54 min).

A total of 111 children (median age 5 years 4 months, IQR 2 years 8 months to 8 years 5 months) underwent general anaesthesia for neuroimaging. Fifty-six per cent of children had neuro-developmental disabilities. Twenty-five per cent had scans before cochlear implant surgery. Airway support was needed for 30% in recovery, and for one child in transit to the ward. No children vomited during general anaesthesia, but one vomited afterwards and two became nauseated requiring ondansetron. All scans were successful. In 103 children for whom we collected data, median time for the child to wake was 1 h and 30 min (IQR 1 h 12 min to 1 h 45 min).

Parents and children were asked to grade their experiences (table 2).

Our rates for successful sedated scans were similar to those reported in other studies in the UK.[3] The one serious adverse event (an unscheduled overnight hospital stay) in 301 sedated scans is consistent with a serious adverse event rate of 0.33% (95% CI 0.06 to 1.85%).

Although observational, our results suggest that general anaesthesia could be more convenient and better tolerated than sedation for neuroimaging children. Future work to compare the economic cost and patient satisfaction of a mixed service of sedation and anaesthesia versus anaesthesia alone may help determine how can we most efficiently use our current resources and best serve our patients' interests.

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