

Update on Pediatric Ambulatory Surgery.

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The past thirty five years has seen incredible progress in the care of pediatric surgical patients; we have learned that many things are possible, and many attitudes have changed. When I first spoke about "Day Surgery for Children" at this meeting in 1972 someone came up to me and said "This is all very well but our insurance carriers will not pay unless the child is admitted to hospital". We have come a long way since then!

What is topical regarding ambulatory anesthesia for children in 2008?

The Selection of Patients for Day Surgery.

Considerations have always been; the type of surgery, the health of the child, and the family circumstances.

Progressively over the years we have added more and more procedures to the list of those acceptable for the day surgery unit; Laparoscopic cholecystectomy and Nissen fundoplication are amongst the latest to be added! The original maxim that "any procedure where no special care is required apart from that that can be given by loving parents in the home" is probably still a good guide. Endoscopic procedures have decreased postoperative morbidity and have opened a whole range of new operations for consideration as day surgery cases.

The added responsibility of the pediatric anesthesiologist to provide services for a whole range of imaging studies and painful medical procedures has added a new class of ambulatory patients to the anesthesia schedule. It is desirable whenever possible that these patients should be channeled through the day surgery unit for preparation and recovery.

The health of the child has always been an important consideration but here again the envelope has been pushed. From selecting only ASA class 1 patients we rapidly realized that, in fact, those children with chronic diseases may be just the ones to benefit most from not being admitted to hospital. There remains however considerable variation in opinion as to which children are fit for day surgery! A recent Canadian study found no consensus when considering children with a fever, URI, obstructive sleep apnea, asthma, morbid obesity, diabetes, or MH. The only case where a clear majority would decline OPD anesthesia was a child with sickle cell disease for tonsillectomy. We do however in 2008 have some resources on which to base our decisions as to who is fit:

The child with an URI has always been a dilemma but we are now more informed and can base our decisions on many studies rather than routinely canceling these cases. In general children with mild URI symptoms, no fever, clear secretions, and otherwise well are usually accepted for anesthesia. We can then design an anesthesia technique which will minimize the risk of complications. Use of a mask or LMA, avoidance of an ETT, use of atropine,

and anesthesia with sevoflurane may reduce complications. Continued close observation and SPO₂ monitoring during emergence into the PACU are important. Children with URI desaturate more rapidly but this can be avoided and/or treated with close medical supervision and does not constitute a reason to cancel. Children with more severe symptoms, purulent secretions or productive cough, a high fever or chest signs should be postponed, if possible, for at least 4 weeks. Children with a history of asthma and a URI demand special attention; non-urgent surgery should be deferred for 4 weeks and until the asthma is well controlled.

T & A's as a day surgery procedure became popular in the 1980's but this brought with it another dilemma. The commonest indication for T & A became obstructive sleep apnea (OSA) – an indication that went over well with insurers so that there was a new epidemic of OSA. However some OSA patients were known to have postoperative problems sometimes, and hence we had a need to sort out who was OK for the day surgery unit. In 2002 this became a little easier to decide, thanks to the Subcommittee on OSA of the Section of Pediatric Pulmonology of the American Academy of Pediatrics. These guidelines recommended the admission for postoperative monitoring of the following patients; age younger than 3 years, or those with, severe OSA on polysomnography, failure to thrive, obesity, Hx of prematurity, recent URI, craniofacial anomalies, or neuromuscular disorders. These classifications are still open to interpretation but do provide quite good guidelines. Patients with severe OSA are less likely to suffer postoperative desaturations if they are operated upon early in the day. Patients with only mild OSA by polysomnography are improved by T & A and do not have postoperative problems. The anesthesia technique should be tailored for the patient with severe OSA; narcotics should be avoided or strictly limited (OSA patients are sensitive to narcotics). The use of preoperative dexamethasone, intra-operative ketamine, and infiltration of local analgesic solution limits the need for narcotics.

The Selection of Anesthesia techniques for Ambulatory Patients.

The introduction of the 'rapid recovery drugs', propofol, sevoflurane, and remifentanyl, has provided for advances in anesthesia techniques to meet the need for minimal postoperative morbidity in the day surgery patient. Propofol has the added advantage of its anti-emetic properties, brisk clear-headed recovery, and blunting of laryngeal reflexes – thus insertion of the LMA is greatly facilitated. The use of the LMA avoids endotracheal intubation for cases where access to the face is limited (e.g. strabismus, tongue tie etc.). Regional analgesia to supplement surgical anesthesia and provide for postoperative pain relief reduces the need for long acting narcotics and their accompanying nausea and vomiting.

Postoperative analgesia can be ideally achieved by a combination of regional analgesia and NSAIDS, however, for the patient who is going home, the parents must be advised on continuing therapy to prevent pain. It is preferable

that therapy should be administered before pain becomes significant. Oral analgesics should be provided to be given regularly and pre-emptively.

Follow-Up Studies and Assessment of Care.

There is general agreement that families appreciate a follow-up phone call from the day surgery unit. Even after a smooth anesthetic and peri-operative experience there is evidence that some children will demonstrate changes in behavior that may persist for some weeks. It is preferable that parents should be warned to expect this.

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