

The Anaesthetist and the Paediatric Patient

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Summary

The ideal situation in the context of Paediatric Anaesthesia is to have a team: Anaesthetist, Surgeon, Assistants and Nurses who dedicate their working life to the care of young patients⁽¹⁾. In Malta an island of 300,000 inhabitants and a yearly birth rate of 5000 there is enough surgical work to warrant the establishment of such a team.

Logistics

Paediatric Surgery comprises all surgery done to the under 16 years of age patients but of course there are different surgical specialities involved. In Malta and Gozo during 1984 there were a total of 2184 anaesthesias delivered to paediatric patients:-

Table I

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| 750 - General surgery cases |
| 748 - Ear nose and throat surgical cases |
| 275 - Ophthalmic surgical cases |
| 255 - Dental surgical cases |
| 145 - Orthopaedic and neurosurgical cases |
| 10 - Cases of neonatal surgery often done as an emergency to correct a life threatening birth defect. |
| <u>2184 - Total</u> |

The operative intervention was usually:-
Hernias and misplaced testes in the Surgical cases, tonsillectomy in the ENT cases, squint correction in the Ophthalmic cases, difficult extractions in the dental cases.

The Child as an Anaesthetic patient

The child needing anaesthesia should not be considered by the Anaesthetist as just a young adult but should be considered as a separate individual in a class by himself with problems in-

herent only to him⁽²⁾. Managing the child as a young adult on a weight and square metre surface area basis will cause the child, a lot of discomfort, the anaesthetist; a lot of anxiety and the surgeon; a lot of frustration. It is essential to ensure beforehand that the paediatric surgeon and anaesthetist know each other for work to proceed smoothly and without hindrance.

The psychology of the child is an important factor and a lot of thought should go to the simple fact that for the first time in his life the child is being separated from his parents⁽³⁾. Forcibly taking the child away from his parents one day before surgery and dumping him in a hospital cot among a lot of strangers and other children is not going to help matters. Good doses of sedatives only help allay the anxiety and the fear reaction but not to eliminate it. It is even worse to trick the child by distracting his attention with a toy and then hiding the parent away. This induction to the hospital atmosphere will only increase the apprehension and inflict a lot of psychological trauma on the young client. This mental distress will make the child resentful of the hospital, the personnel and the medical staff rendering fruitful cooperation and nigh impossible.

The hospital ward and all who work there have now become hateful aliens in the child's eye - whatever they do in an attempt to ingratiate themselves to the child will be met with more screams and shrill cries of disapproval. Maybe this form of psychological trauma inflicted early in life reflects the current persecution mania most patients have against hospital doctors, and the innate belligerence that often breaks out into fist fights in the casualty department.

It is my opinion that a lot can be done now to allay the child's fears, to reduce the mental trauma of the child client and to ensure a quiet hospital atmosphere with happy child client and not drugged ones.

It is my fervent opinion that parents should accompany their offspring while in hospital, while proceeding to and into the theatre's Anaesthetic Room. The parent should leave the child only while he is fully anaesthetised and should meet the child again as soon as he is out of the recovery room.

This diminished parent-child separation has a lot to recommend it. It is feasible, difficulties created are not insurmountable and it has already become a standard practice in paediatric hospitals abroad⁽⁴⁾.

Indeed in Malta it used to be practised in the two private hospitals that have been unfortunately closed down.

All hospital staff should understand their client's needs better and be guided by wise counsels and not by prejudice and dogma.

While an adult cases the anaesthetist can discuss the type of anaesthesia with the patient, in children the anaesthetist has to decide the type of anaesthesia to administer all by himself, hopefully in the best interest of the patient. It is a third person, the parent, who signs the consent form for anaesthesia for the child client.

The child patient has less complications than an adult one as regards dentures, but loose teeth and dental appliances to correct badly growing teeth may be met with occasionally.

A complication never met with in paediatric practice is that of alcoholism and smoking. It is indeed something to be thankful for! The problem of enzyme induction can exist only in the child who is on drugs known to stimulate such a reaction - a rather uncommon encounter.

The paediatric anaesthetist is faced with a bigger problem, it is the patient's first anaesthetic, any allergies that may be present are going to manifest themselves for the first time, the renal excretory mechanism is yet untested and the hepatic detoxifying function is as yet immature. That is why paediatric drug dosage is not just a simple calculation based on Clark's formulae⁽⁵⁾.

The child's airway size and lung capacities can impose formidable problems on the inexperienced anaesthetist. Everything has to be tailed down to fit the child. Indeed before the introduction of Ayre's T piece and following modifications the problem of ensuring enough oxygen supply to and carbon dioxide removal from the alveoli was often a health hazard by itself. Intubation can indeed be a feat!

The Anaesthetist caring for the child patient

Dr. Jackson Rees a noted paediatric anaesthetist, recommends that the paediatric anaesthetist should spend two further years training in the speciality after having completed full training as anaesthetist. This advice coming from a humble yet world renowned anaesthetist had better be heeded as any mishandling in paediatric cases often ends in fatality. There is little leeway for safety and less chance of correcting serious mistakes in young babies. Drug overdosage, inhalation of vomit, difficulty in establishing and maintaining an airway, disconnection of tubes and apparatus are all hazards to be carefully surmounted by the experienced anaesthetist.

The paediatric anaesthetist must have a disposition for his job. It will be foodhardly to force any anaesthetist to do a paediatric case just because he happens to be on duty and so is available. The well prepared paediatric anaesthetist inspires confidence in the theatre staff and in the child's parents.

The handling of the child patient must allay the mental trauma induced by parental absence. Assistance to the paediatric anaesthetist has to be of a high standard - a specially trained nurse anaesthetist has to help him find a vein, establish an IV line and set up apparatus for monitoring cardio vascular function during anaesthesia.

Temperature loss has to be carefully guarded against in the paediatric patient. Monitoring of the central body temperature is in paediatric cases as important as cardiac and blood gases monitoring.

Enzyme action is dependent on body temperature and hypothermia means that a long period of time is wasted in the recovery room, till the child recovers consciousness. Guarding against heat loss is a special feature the paediatric anaesthetist has to cater for. Electrical safety of diathermy and monitoring equipment has to be of a very high standard indeed as any current leak in excess of 30MA may prove fatal.

The ventilator has to be specially designed for paediatric use as dead space has to be kept to a minimum, tidal volume has to be adjusted cubic centimeter by cubic centimeter and the pressure has to be kept within a margin of safety. The pattern of flow may have to be adjusted depending on the patency of the lower airways.

Feed back monitoring of blood gases has to be done regularly to enable breath by breath control.

Inhalation analgesia has much to recommend it as narcotic analgesia may lead to post operative delay in re-establishing adequate tidal volume with consequent blood gas derangement.

There are certain centres that do not countenance spinals and epidurals in infants in the fear that tampering with the spinal elements in childhood may lead to the development of backache in adults. This is still an undecided point but I think that in paediatric patients local blocks and spinals have no place whatsoever as the mental trauma of limb paralysis in such active little clients must be distressing and consciousness during a long operative procedure an unnecessary evil.

The Hospital Environment

In Malta the modern Karen Grech Hospital has appropriately built paediatric wards that are brightly painted with colourful murals and full of bedside toys that along with selected kind gentle nurses makes the child's stay in hospital as less traumatic as possible. The theatre atmosphere however is still far from adequate as it is run by nurses used to manage adult patients who have no time to waste for paediatric ones, consider them as little adults, do not desire the presence of parents beyond the theatre suite door and have no gentleness in the pre anaesthetic management. The corridors and anaesthetic rooms are bare and painted a sterile greenish colour and a single picture of a horse is often hidden away instead of paraded in front of the child to divert his attention. In my opinion the admission of parents to the theatre anaesthetic room should be initiated forthwith, only specially trained and well disposed theatre nurses should handle paediatric patients, a lot of decorating in-

stalled in the theatre corridors and anaesthetic rooms such as painted ceiling, animal pictures, special colourful masks, and caps etc. and the most important of all have more anaesthetic nurses with paediatric experience help the poor harassed anaesthetist.

Post operative morbidity

During 1984, 2184 general anaesthetics were delivered in St. Luke's Hospital complex for patients under 16 years of age. No fatality occurred in this series and post operative morbidity due to anaesthetic accidents was minimal. The commonest hazard were hypothermia and vocal cord spasms with cyanosis. With adequate care these hazards can be prevented and problems of morbidity eliminated. The appointment of properly trained anaesthetic nurses with paediatric training will be a huge asset to the little client - the future citizen of Malta.

References

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