

PATIENT PREPARATION FOR PEDIATRIC SURGERY

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Pediatric patients differ significantly from adults in physiologic parameters such as hemodynamic stability, increased metabolic rate, and the smaller size of structures. Children have much greater difficulty maintaining core body temperature during and after surgery, and they have a tendency to form heavier scars, initially. Over and above these and many other physiologic factors that can complicate their management, pediatric patients also have significant psychosocial differences. Such issues include the developmental level of the child, the anxiety level of the parent-patient relationship, and the effect of parental involvement relative to preparation.

During the past 50 years, a growing body of literature has confirmed that children and parents experience anxiety related to health-care encounters such as hospitalization and surgery. One study demonstrated that 23% of children hospitalized for orthopedic procedures demonstrated signs of depression. Literature has demonstrated that both physical and psychological recovery from a surgical experience is positively affected by preparing families for the hospitalization as well as supporting them throughout. Some techniques that have been studied for preparing children have included stress point reduction, information and emotional support, film modeling, and stress inoculation. Active participation by role-playing and manipulation of medical equipment have also been demonstrated as effective methods of preparation. Many hospitals now have these types of programs available in order to better prepare families for hospitalization and surgery.

DEVELOPMENTAL CONCERNS

Children have different concerns and cognitive abilities at each developmental stage. Therefore, preparation programs must be adjusted accordingly. Infants (age 0 to 12 months) are concerned primarily with separation from their parents, and immediate gratification of physical needs. Infants separated from their parents demonstrate signs of both depression and anxiety. After six months of age, stranger-anxiety is a factor in planning for the child's care.

Toddlers (age 13 to 30 months) are concerned with issues of autonomy. They are seeking independence and acquiring new skills in various areas of development such as language, locomotion, and feeding. Active participation of the child and parent in care issues, and the use of transition objects can reduce the stress during these types of encounters.

Preschoolers (age 2½ to 5 years) are both sensitive and fearful. They are concerned with death and with physical injury. It is important to establish a rapport with the child, and to be concrete and explicit while explaining the procedures. Use of dolls and drawings is helpful with this age group. The primary concern among preschoolers is that of body mutilation. Children are not likely to verbalize many of their concerns. Numerous studies have demonstrated that the preschool age is generally the worst age for elective surgery in terms of their ability to handle psychological stress and the likelihood of psychological reactions.

The elementary school-age child (6 to 11 years) is generally more concerned with issues of anesthesia, and fear of death. Because this age group has significant intellectual curiosity, specific and concrete information needs to be provided. Adolescents (12 to 20 years) have concerns related to body image. They are particularly sensitive regarding acceptance by their peers. Body image concerns such as scars and alteration of activity levels, and the need to use special appliances may be especially threatening to this age group. Involving a teen in a decision-making process is particularly important to enhancing feelings of self-worth.

STRATEGIES FOR PREPARATION FOR HOSPITAL SURGERY

Preparation programs are designed to reduce anxiety and help a family feel more in control of the hospital experience. Four basic principals have been recognized as effective and should be included as part of any comprehensive preparation program.

The first principle is keeping a patient informed. Information should be provided to the

child and the parents in a manner consistent with the child's developmental level and ability to understand. Additional information that the parents may need, should be provided with the child not present.

The second principle is to offer realistic choices where possible in order to have the child feel in control of the experience. One example of this is allowing the child to choose in which arm an IV should be placed.

A third principle is that of parent participation in the preparation program. An informed, calm parent goes a long way toward reassuring a child. Most hospitals now allow parents to remain with the child during the hospital stay, and some hospitals allow parents to be present during induction of anesthesia.

The fourth principle is children should be offered the opportunity to "play with" or manipulate hospital equipment in order to better understand their hospital experience. Role-playing and manipulation of medical equipment are two ways in which children can integrate the information they have been given.

The following are also helpful strategies in insuring proper pre-surgical preparation:

1. Age appropriate explanation of the procedure by the surgeon.
2. A tour of the hospital or office, lead by a child-life specialist or a pediatric nurse experienced in preparation of children.
3. An audiovisual presentation, which addresses normal feelings experienced during the surgery.
4. Reinforcement of specific teaching, the day before or the day of the procedure.
5. Parental presence during induction of anesthesia, and in the recovery room.
6. Literature for parents, to aid in reinforcing the teaching at home. This may include a list of children's books about health care.

There are certain universal rules for successful teaching, even though individual preparation must be designed based on a particular patient. First it is important to always be honest with a patient about what to expect, especially with respect to pain. It is important to begin teaching by asking the patient what they think is going to happen. This gives a clue as to what the child really wants to know. It is also important to include information about what happens when the procedure is over.

Finally, it is important to recognize that pain management in children is a critical issue. Historically and traditionally, children have been under-medicated for pain, especially postoperatively. Numerous studies have demonstrated that adequate pain medication reduces not just psychological stress, but also physiological stress that results in fewer postoperative complications.

In summary, the pediatric patient should be treated in an environment that is designed with the child in mind. The pediatric team should include podiatric surgeons with experience in the management of children, pediatric anesthesiologists and nurses, and a pediatric hospital.

BIBLIOGRAPHY

- Krauss B, Green S: Sedation and analgesia and procedures in children. *New Eng J Med* 342:938-945, 2000.
- Mahan C, Mahan KT: Patient preparation for pediatric surgery. *Clin Pod Med Surg* 4:1-9, 1987.