Evaluation of the Preoperative Parental Anxiety before Elective Surgery for Their Infants and Children

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Abstract

Most parents of hospitalized children for elective surgery experience increased level of anxiety, which affects also child's anxiety and coping with surgical procedures. This study measured the anxiety levels in parents of children scheduled for elective surgery at Zagazig University Hospitals. Anxiety levels were investigated using a questionnaire (State-Trait Anxiety Inventory) which was given to the parents of infants and children presented for elective surgery. We also examined the following factors : age of the child, previous surgery of the child or other children of the parents, parental gender, their level of education, grade of operation, prior discussion between the parent and the anesthesiologist. Three hundred parents of 208 children aged 6 months to 13 years (mean 4.8 ± 2.3) participated in the study, they included 194 mothers and 106 fathers. Our results revealed that 42% of parents were significantly axious, the parents were more anxious when their child was less than one year of age, when its is the first child's surgery, mothers were significantly anxious than fathers, while parental level of education, grade of operation, prior discussion between the parent and the anesthesiologist have no statistical significance. We concluded that preoperative parental anxiety is highly expected and recommended that the preoperative preparation of the child better extended to their parents psychological state due to this increased risk of preoperative anxiety for a better postoperative outcome.

Introduction

High levels of pathological anxiety have been identified in parents of children scheduled for elective surgery, whose anxiety levels fall outside the normal range of expected human emotion (Thompson et al., 1996).

The anxiety identified has implications not just for the child but also for the family. Anxiety transmitted to children can lengthen postoperative recovery time and anxiety in parents has a negative effect on family dynamics (Shirley et al., 1998).

According to Kain et al. (1996); Kotiniemi et al. (1997a) and Kotiniemi et al. (1997b) parental preoperative anxiety is of particular importance for the anesthesiologist as increased parental anxiety has been shown to result in increased anxiety in their children. This heightened anxiety response, in turn, leads to immediate postoperative maladaptive behavioral responses such as nightmares, separation anxiety, eating disturbances and new onset enuresis with reports of up to 54% of all children undergoing general anesthesia develop new negative behaviors after surgery.

The aim of this study was to measure anxiety levels in parents of children admitted for elective surgery. We specifically examined the following factors : age of the child, whether or not the child had previous surgery, whether or not the parent's other children had previous surgery, parental gender, highest level of education obtained by the parents, and whether or not there was prior discussion between the parent and

anesthesiologist, and if any of these factors influenced the level of parental anxiety, so anesthesiologists who care for children could preoperatively identify parents at risk of anxiety with attempts to alleviate their fears and anxiety even with help of psychiatrists.

Subjects and Methods

Parents of children aged 6 months to 13 years old who admitted as inpatients to the Zagazig University Hospital during the period from March 1998 to January 2000 and scheduled for elective surgery e.g. general, urological, ophthalmic, orthopedic, plastic surgery were approached personally by the authors.

The nature of the surgery was divided into three categories. Minor (procedures lasting less than 1 hour and suitable for day-care), intermediate (procedures lasting longer than 1 hour) and major (procedures lasting longer than 1 hour) after which high depen-dency care would be appropriate. These categories were according to Thompson et al. (1996).

Demographic data related to the age of the child, number of siblings, parental occupation and level of education, in addition other data related to previous surgery for the child or for other sibling.

In the immediate preoperative period a questionnaire was given to all parents of children presenting for elective surgery. We used the State-Trait Anxiety Inventory (STAI; Spielberger, CD, Palo Alto, CA, USA, 1970), which is a standard psychometric tool used to assess situational anxiety. It consist of two 20-question scores, written on a sixth grade level, and generally takes 5-10 min. to complete. The first part measures the current emotional state of the subject, including immediate feelings of apprehension, nervousness, and worry. The second set of questions measures the subject's personality trait or how the person generally feels, and is used to compare baselines between groups. The STAI is a leading measure of personal anxiety and has been used and validated in a variety of different settings.

The questionnaire was offered to one or both parents (if present) when they were waiting with their child in a pre-anesthesia holding area shortly before surgery begin.

Data were collected, the results were analyzed using computer programs and statistical differences between groups were analyzed by t-test for continuous parameter data, one way analysis of variance on ranks to determine differences between three or more groups and simple linear regression to determine if level of education correlated with test scores. P-values less than 0.05 were considered to indicate statistical significance.

Results

Three hundred parents of 208 children aged 6 months to 13 years (mean 4.8 ± 2.3), participated in this study. They included 294 mothers and 106 fathers, parent and patient characteristics are listed in table (1).

The significant findings are as the following :

1- Parents demonstrated greater anxiety when their child was less than 1 year of age (P=0.002). When separately analyzed based on parental gender, anxiety was significant only for mothers (P=0.002) and not for fathers (P=0.2).

2- Parents were less anxious if their child had undergone surgery in the past (P=0.004) which was also significant only for mothers (P=0.001) and not for fathers (P=0.02) when analyzed separately.

3- There were insufficient numbers to determine if mothers of children less than one year of age who had previous surgery (n=2) were less anxious than mothers of children less than one year of age who did not have previous surgery (n=13).

4- Neither trait (r=0.34) nor state (r=0.16) anxiety scores correlated with parents level of education.

Table (1): Parent and patient characteristics

Age of children		**6 months – 13 years (4.8 ± 2.3)**
Parental gender	Female	194
	Male	106
Grade of surgery	Minor	141
Operation grade	Intermediate	129
	Major	30
Previous surgery of patient	Yes	117
	No	183
Previous surgery of sibs	Yes	82
	No	218
Parental level of education :	University (high)	38
	Technical (middle)	164
	Primary or prep school (low)	98
Prior discussion with anesthesiologist	Yes	117
	No	183

Table (2) : The results of the study.

		State	Trait
Entire study population*		41 ± 11	35 ± 8.6
Age**	<1	47 (25-65)	33 (22-45)
	>1	40 (22-60)	34 (23-50)
	P value	0.002	0.15
Parental gender**	Female	41 (24-51)	35 (27-42)
	Male	39 (31-48)	33 (27-38)
	P value	0.09	0.12
Parental level of education	High	47 (30 – 62)	36 (22 – 48)
	Middle	43 (29 – 63)	33 (24 – 49)
	Low	37 (21 – 61)	32 (23 – 49)
	P value	0.2	0.4
Operation grade**	Minor	37 (20-60)	32 (21-48)
	Intermediate	43 (28-62)	33 (24-49)
	Major	47 (31-63)	36 (23-49)
	P value	0.2	0.4
Previous surgery of patient**	Yes	39 (22-56)	34 (23-50)
	No	42 (25-63)	34 (22-48)
	P value	0.004	0.7
Previous surgery of sibs**			
	Yes	40 (24-57)	34 (23-50)
	No	41 (23-63)	34 (24-51)
	P value	0.6	0.7
Prior discussion with the anesthesiologist**			
	Yes	40 (23-62)	34 (23-49)
	No	40 (23-60)	35 (23-50)
	P value	0.5	0.5

* Expressed as mean ± SD. ** Expressed as mean (range).

Discussion:

Anxiety is normal in stressful situations and its effects are well known as are the problems of patho-logical anxiety and its effects on mood, performance and communication, when parents become overly anxious, potential risks can become exaggerated. This can then be transmitted to the child and have a long-lasting impact beyond the hospital stay (Tiedeman, 1997).

Our results demonstrate that mothers of infants less than one year of age and children of all ages who had not undergone surgery before were especially prone to increased preoperative anxiety. These

results agree with other study done by Litman et al. (1996).

A variety of interventions have been described to prevent or decrease the severity of untoward reactions in children. These include administration of premedication, parental presence during induction of anesthesia and preoperative psychological preparation (Visintainer and Wolfer, 1975).

There was few studies which address the parental anxiety in the perioperative period. Vessey et al. (1994) investigated the effect on parents of accompanying their child during induction of anesthesia. They found the most upsetting factors were separation from their children after induction, watching or feeling the child go limp with induction and seeing the child upset before induction of anesthesia.

Bevan et al. (1990) studied 134 children who had either their parent present or absent during induction. Anxiety was assessed in both adults and children at the time of the preoperative assessment, the time of surgery, and one week postoperatively. Parents were classified as either "anxious" or "calm" based on a median split of their anxiety scores in the pre-anesthesia waiting room. They demonstrated that the mood of the children of "calm" parents was not improved by the parent's presence during induction of anesthesia. However, children whose parents were classified as "anxious" were significantly more upset when they were accompanied by their parent during induction of anesthesia. The authors concluded that anesthesiologists should assess parental anxiety preoperatively to determine which children would benefit from having their parents present during induction of anesthesia.

Conclusion and Recommendations :

Our study determined that mothers of children less than one year of age have significantly increased preoperative anxiety, also mothers of children of all ages are generally less anxious if their children had undergone surgery in the past.

We recommend that anesthesiologists should seek to identify parents who need increased emotional support preoperatively for the emotional and behavioral well-being of the child. Also special attention to the groups we have identified who are at increased risk for preoperative anxiety even with psychiatric consultation and help.

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تقييم لحالة القلق النفسي لدى أولياء الأمور

قبل اجراء العمليات الجراحية الاختيارية لمواليدهم واطفالهم

معظم أولياء أمور الاطفال بالمستشفيات الذين يقومون باجراء عمليات جراحية اختيارية لهم يمرون بحالة من زيادة القلق النفسى والتى تؤثر بالتالى على حالة القلق النفسى لدى الاطفال وتعاملهم مع العمليات الجراحية.

وتقيس هذه الدراسة مستويات القلق النفسى لدى أولياء امور الاطفال المجهزين لاجراء عمليات جراحية اختيارية بمستشفيات جامعة الزقازيق. وقد تم فحص مستويات القلق النفسى باستخدام استبيان القلق النفسى (الحالة – السمة) والذى تم اعطاؤه لأولياء الامور المتواجدين للعملية.

وقد تم دراسة العوامل التالية : عمر الطفل، عمليات جراحية سابقة للطفل أو أحد الأبناء الأخرين لأولياء الأمور، نوع ولى الأمر، مستوى التعليم، درجة العملية، مناقشة مسبقة بين ولى الأمر وطبيب التخدير.

وقد شارك فى الدراسة ثلاثمائة من أولياء امور مائتان وثمانية اطفال يتراوح اعمارهم من سن ستة شهور وحتى الثالثة عشر عاما (بمتوسط عمر قدره ٨ر٤ ± ٣ر٢ سنة) وقد كانوا مائة واربعة وتسعون من الامهات ومائة وستة من الأباء.