

# ASPECTS OF VOMITING IN THE AFRICAN

## POSTOPERATIVE VOMITING AND VOMITING OF PREGNANCY

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The group of Africans under discussion consists of 52,000 mixed tribal people (Swazi, Mbayi, Zulu, Sotho and Shangaan) draining to the 175-bed mission hospital at which I serve. They vary in tribe, age, sex and nature of operation performed in the first group, and in tribe, age and parity in the second group.

### POSTOPERATIVE VOMITING

While working with Whites and during my reading on the subject, I was struck by the high actual and reported incidence of postoperative vomiting in this group following general anaesthesia. Irrespective of the anaesthetic agent used, I rarely saw postoperative vomiting in the African. I was thus prompted to follow up a comparatively small number (100) who had undergone operation under general anaesthesia at this hospital.

The group comprised patients undergoing a mixed variety of operative procedures ranging from ophthalmic procedures to a thoracotomy, but the majority were orthopaedic and gynaecological cases. The age-group at risk varied from 2 weeks to 90 years (Table I) and the operat-

ing time from 10 to 120 minutes (Table III). Both emergencies and 'cold' surgical cases were included (Table II), but very short procedures such as reduction of fractures, opening of abscesses and many D&Cs, i.e. procedures lasting less than 10 minutes, were excluded although no vomiting occurred in any of these minor cases. Most fractures were splinted to allow the swelling to subside and thus to be done as 'cold' procedures. Many cases were done under regional and local anaesthesia and most caesarean sections were done under spinal anaesthesia in the belief that this is better for the child; these were not included.

TABLE I. AGE AND SEX INCIDENCE

0 - 4 Years	5		
5 - 9 "	12		
10 - 20 "	18	Male	47
21 - 60 "	58	Female	52
Over 61 "	7	True hermaphrodite	1
Total	100	Total	100



TABLE II. TYPE OF OPERATION

Majors	38	Emergencies	7
Minors	62	Other	93
Total	100	Total	100
Upper abdominal	1		
Lower abdominal	24		
Thoracic	1		
Other	74		
Total	100		

TABLE III. DURATION AND TYPE OF ANAESTHESIA

Face mask	82	Ether maintenance	76
Endotracheal tube	18	Halothane maintenance	7
Nasogastric tube	3	Trilene maintenance	1
Controlled respiration	4	PGO	16
Less than 30 minutes	65	Total	100
More than 30 minutes	35		

*Premedication.* For fit adults atropine, 0.6 mg., and pethidine, 100 mg.— $\frac{1}{2}$  - 1 hour pre-operatively—but no anti-emetics, were given.

For children and elderly people atropine and pethidine in reduced doses were given. Children were also sometimes given seconal instead of pethidine.

*Anaesthetic technique* (Table III). After pre-oxygenation the majority of patients had a thiopentone induction settling them with nitrogen monoxide and halothane and continuing with ether in most cases, but using halothane or Trilene for diathermy and halothane for very small children.

Succinyl choline was used for intubation and Gallamine for controlled respiration. Eighteen cases were intubated and 4 controlled.

A semi-closed circuit with CO<sub>2</sub> absorber was used for most cases to conserve anaesthetic drugs. There was no quantitative device such as the EMO for ether administration but a Fluotec was used for halothane.

As the operating team know each other well and often work together, the operating time was short in most cases—less than 30 minutes in 65 cases and more than 30 minutes in 35 cases. All cases were given anaesthetics by non-specialized anaesthetists.

*Postoperative medication.* Morphine was used for sedation in adults and pethidine at 1 mg./lb. in children. No anti-emetics were given. The patients were allowed to eat or drink as soon as they wished to, provided they did not have nasogastric tubes.

The patients were checked for 8 - 12 hours postoperatively and again the next day with regard to vomiting. This was done by personal observation of the nursing staff and neighbouring patients. Nausea was not checked owing to the language difficulty and the sedated postoperative state.

*Not a single patient vomited.* In fact the only patient who vomited postoperatively in the trial period was a patient who had a caesarean section under spinal anaesthetic.

#### Discussion

Postoperative vomiting depends on many factors, varying from psychological make-up to the drug used, but it seems clear from this study that race plays an important part.

Gelfand<sup>5</sup> has stated that vomiting is rarer in the Bantu than in the European in blackwater fever.

Holmes<sup>7</sup> reports an increased number of patients with vomiting after intubation, but this did not occur in this series. He also pointed to a lower incidence of vomiting in gynaecological cases and, as many of the African cases had pelvic operations, this may be a factor. The vomiting was also not related to postoperative medication, whereas I have seen many Whites vomiting after pethidine or morphine, particularly if these were given intravenously. The short time of the operation, 65 taking less than 30 minutes, may have played a part, but I feel that there is some factor specifically relating to the African, and if we take into consideration the rarity of gastro-intestinal illness in this group apart from gastroenteritis and typhoid, I feel that the racial factor is the most important.

Whatever the reason for the rarity of the postoperative vomiting, the rarity makes ether a cheap and reliable agent for use in the African and it decreases to a certain extent the need for such strict postoperative watching where staff is limited.

#### VOMITING IN PREGNANCY

The rarity of vomiting postoperatively and the fact that we had no cases of hyperemesis gravidarum admitted to the hospital in 1965, when there were just over 1,000 hospital deliveries, prompted me to investigate the problem of nausea and vomiting during pregnancy in the African.

I again took a comparatively small number of patients (125 in all) and was of the opinion that nausea and vomiting did not occur, but I was due for a shock because what happened was that these patients had never been asked about vomiting before, and approximately 40% of them complained of either nausea or nausea and vomiting (Tables IV - VI), which is similar to the percentage quoted by Brown.<sup>4</sup> The interesting point was that in many cases (Table VI) the condition continued late into pregnancy, even into the last month.

TABLE IV. RELATIONSHIP OF PARITY TO NAUSEA AND VOMITING

		Nausea only	Nausea and vomiting	Nil
Primips	30	5	9	16
Para 1 - 3	62	12	24	36
More than para 4	33	10	5	18
Total	125	27	38	70

TABLE V. RELATIONSHIP OF AGE TO NAUSEA AND VOMITING

	Nausea	Nausea and vomiting	Nil
Over 30 years	4	10	17
Under 30 years	23	28	53
Total cases = 125			

TABLE VI. RELATIONSHIP OF DURATION OF PREGNANCY TO NAUSEA AND VOMITING

Nil	70
First 3 months	23
More than 3 months	32
Up to delivery time	—
Total	125



The people investigated were again a mixed tribal group of unselected primiparae and multiparae, but one point of interest was the rarity of pre-eclampsia among them. We rarely see pre-eclampsia in an African.

#### Discussion

The basic causes of vomiting, according to physiology textbooks, appear to be reflexes to or toxins acting directly on the medulla. Which of these factors is more important is difficult to say. There are several theories in this regard:

1. *Neurosis theory*. The people included in the survey are outwardly a most placid group and attempted suicide is rare; they do, however, being a mixed group, fight at the weekends.

2. *Vitamin-B deficiency*. Pellagra is rife in this area and may play a part in the nausea and vomiting.

3. *Endocrinological surveys* and electrolyte estimations were not done because of the expense involved.

4. *Allergy* may play a part as asthma and allergic eye and skin disease are common in this district.

5. *'Toxins'*. Most patients also attend the *Inyanga* (witchdoctor) who may have given them emetics to get rid of the evil demons, and this may be a factor in the nausea and vomiting continuing so long in pregnancy.

#### SUMMARY AND CONCLUSIONS

(i) A study of 100 unselected African patients was made with relation to postoperative vomiting.

(ii) A study was made of 125 unselected African patients with relation to nausea and vomiting during pregnancy.

#### Conclusions

1. Postoperative vomiting in the African of the Eastern Transvaal is rare after general anaesthetic, irrespective of the agent used for induction and maintenance.

2. Ether, which is cheap, can be used as a safe and effective form of anaesthetic without a large risk of post-operative vomiting in the African.

3. Hyperemesis gravidarum is rare in the Eastern Transvaal African, but nausea and vomiting during pregnancy does occur almost as commonly as in Whites and may be present throughout pregnancy.

I wish to thank my wife for her help with the obstetrical cases and her assistance with the manuscript.

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