

Intra Operative Suggestions Reduce Incidences of Post hysterectomy Emesis

Pages with reference to book, From 202 To 204

Mohammad Maroof (Department of Anaesthesiology, King Fahad National Guard Hospital, Riyadh, Saudi Arabia.)
Syed Moied Ahmed, Rashid Manzoor Khan, Shah Jahan Bano, Arshad W. Haque (J.N. Medical College, Aligarh, India.)

Abstract

The influence of therapeutic intraoperative auditory suggestions on the incidence and severity of emetic episodes was investigated in 50 adults ASA I-II patients undergoing elective abdominal hysterectomy. The patients were randomly divided into two groups, each consisting of 25 patients. In group I, a blank tape was played and in group II, positive suggestion was played via headphones throughout the anaesthetic period. It was observed that there was statistically significant difference ($P < 0.05$) between the incidence of vomiting in group I (60%) and group II (36%). The number of vomiting episodes per patient in group I was 3.1 ± 1.2 as compared to 1.7 ± 0.6 in group II. This difference was statistically significant. The patients requiring rescue antiemetic was significantly higher ($P < 0.05$) in group I (66.6%) as compared to group II (22.2%). It is concluded that positive therapeutic suggestion may be considered as an alternative to antiemetic therapy (JPMA 47:202,1997).

Introduction

Auditory information may be registered, processed or both, in some areas of the anaesthetized brain¹⁻³. Two different kinds of memory during general anaesthesia have been described, explicit (declarative, awareness) and implicit (without conscious intentional recollection of target material)^{4,5}. These memory functions have recently been discussed in detail⁶⁻⁸. Many clinical investigators have used implicit memory function to improve post-operative outcome of surgical patients utilizing positive intraoperative suggestions. McLintock et al⁹ reported reduced post-operative morphine requirements, in patients undergoing hysterectomy with suggestion therapy. However, they failed to reduce the incidence of post-operative nausea and vomiting (PONV) in the same study. Some other previous studies have failed to establish a conclusive cause and effect relationship due to absence of control group, lack of standardization of the anaesthetic techniques/variable surgical procedures¹⁰⁻¹³ or non-specific suggestion materials used⁹⁻¹⁴. Some details regarding these conflicting results have been discussed by Millar¹⁵. The aim of our study was to investigate the effect of positive therapeutic suggestions on the incidence and severity of emetic episodes in patients undergoing elective abdominal hysterectomy under a standardized anaesthetic technique and strictly precise suggestive material on PONV.

Patients and Methods

Following JIRB approval, 50 ASA I and II patients, age ranging between 40-60 years, posted for elective abdominal hysterectomy were studied. Patients with hearing defects or those with history of antiemetic medication over the last 24 hours were not included. Patients were randomly allocated into one of the two groups, each consisting of 25 patients.

Group I (No suggestion) - Blank tape was played throughout the anaesthetic period.

Group II (Suggestion) - Positive intra-operative suggestion was played via headphones, throughout the anaesthetic period.

All patients were premedicated with inj. Promethazine 0.5 mg/kg to a maximum of 25 mg and buprenorphine 0.04 mg/kg IM to a maximum of 0.3 mg, 45 minutes before surgery. Anaesthesia was induced with thiopentone sodium 4-5 mg/kg IV and intubated after relaxation with Vecuronium 0.1 mg/kg IV. Anaesthesia was maintained with halothane (titrated between 1-2% to maintain BP \pm 20% of control) in a mixture of 60% N₂O and 40% O₂. Prior to commencement of surgery, walkman headphones were applied. To those in group I a blank tape was played throughout the anaesthetic period. Patients in group H were played a tape suggesting that they would experience no sickness in the post-operative period. The tape consisted of a male voice speaking in patients' dialect. It lasted for approximately 15 minutes and played repeatedly throughout the surgery. The English version of the tape was "You have been anaesthetized smoothly. Your operation is progressing well, both the surgeons and anaesthesiologist are satisfied with your progress and pleased. We are confident that you would do very well following surgery and in particular you will not feel sick. The injection you were given as premedication contained a drug that prevents nausea and vomiting. This along with the tape you are hearing and the tranquillity that you feel on awakening will result in no sickness at all. I repeat you will have no sickness in the 24 hours following your operation".

Monitoring during anaesthesia consisted of pulse rate, non-invasive blood pressure, the grade of muscle paralysis with peripheral nerve stimulator, End tidal CO₂ with a capnometer and arterial O₂ saturation with a pulse-oximeter.

Each patient was carefully observed for the appearance of clinical signs suggestive of light anaesthesia^{16,17}. At the end of the operation, neuromuscular block was reversed with a mixture of atropine 0.02 mg/kg and neostigmine 0.04 mg/kg. Postoperative pain was relieved with diclofenac sodium 1 mg/kg to a maximum of 75 mg IM, on demand. Metoclopramide 0.25 mg/kg, to a maximum of 10 mg was administered as rescue antiemetic when the patient had vomiting episodes for two or more times. Postoperative follow-up at 24 hours was carried out by a resident who did not know which tape was used. The duration of anaesthesia, the total volume of fluid replacement up to first 24 hours postoperatively, the number of vomiting episodes and the number of patients receiving rescue antiemetic were recorded.

Retching was considered as vomiting in this study. Severity of vomiting was determined by calculating the number of vomiting episodes per patient. In addition patients were questioned about the recollection of intraoperative events, or having heard a tape recorded message. Statistical analysis was performed using the SPSS statistical package with the χ^2 , Mann-Whitney U test and Student's "t" test, $p < 0.05$ was considered as significant.

Results

There was no significant difference between the groups with respect to age, weight and duration of anaesthesia (Table I).

Table I. Demographic perioperative data.

	Group I	Group II
Age in years	49.3±6.3	53.1±5.4
Weight in Kg	52.4±4.2	55.3±3.7
Duration of anaesthesia in minutes	117.9±15.3	125.6±13.7
Fluids required/kg in 24 hours in ml	59.3±13.2	50.7±11.5
No. of patients re-calling of tape	None	None

Fluid requirements in the first 24 hours postoperatively, in group I was more than in group II but this did not achieve statistical significance. No patients on direct questioning revealed awareness for preoperative events or could recall the tape recorded message (Table I). The frequency of vomiting in group II (suggestion) was 36% as compared to 60% in group I.

Furthermore, there was significantly less number of vomiting episodes per patient in group II (1.7±0.6) than in group I (3.1±1.2). Only 22.2% (2 out of 9) of the patients who vomited in group II required rescue antiemetic as compared to 66.5% (10 out of 15) of the patients in group I. These results were statistically significant (Table II).

Table II. Incidence and severity of nausea and vomiting and requirements of rescue antiemetic.

Groups	Emetic incidence		No. of emetic episode per patient	Rescue antiemetic	
	No.	(%)		No.	(%)
Group I no suggestion	15	(60)*	3.1±1.2*	10	(66.6)*
Group II (suggestion)	9	(36)	1.7±0.6	2	(22.2)

*P<0.05

Discussion

In assessing the effects of positive suggestions it is important that suggestions should be targeted specifically at the intended effects. The study by McLintock et al⁹ was on the effects of positive suggestions on post-operative analgesic requirements. The tape played to one group of patients contained the message suggestion “you feel warm and comfortable, calm and relaxed”. Any pain that you feel after the operation will not concern you”. The reported 23% decrease in postoperative morphine consumption in the group who received the suggestion compared to those who were played

the blank tape. They also reported that the incidence of PONV at 50% in both groups. As the tape did not specially mention nausea or vomiting it was expected that the general positive suggestions would have reduced the feeling of nausea, it did not. More recently therapeutic suggestions to relieve PONV have been reported without success by van der Laan et al¹⁴ also. The therapeutic suggestions in this study were also non-specific and did not convey the message that patients would not be sick after the surgery though messages were in affirmative tone. They were only meant to relax patients and make them feel secure. Also in the van der Laan¹⁴ study either Peter Pan or Robinson Crusoe stories were played along with therapeutic suggestion tapes. The processing of this irrelevant information, might have distracted or perplexed therapeutic suggestions. The results of this study imply that intraoperative suggestion during anaesthesia may significantly reduce the incidence and severity of PONV. In this study in contrast to the above studies the therapeutic suggestions were not only positive but also specific, emphasizing the value of anaesthetic technique and medication to protect against PONV. These differences in the two studies may account for the discrepancy in the results. Hence previous studies also failed to standardize the anaesthetic technique^{18,19} contained messages relating to numerous variables¹⁴ and included a wide range of operative procedures¹⁰⁻¹³. To rectify some of these shortcomings this study had a uniform operative procedure and anaesthetic technique with a tape of single point therapeutic message suggestion. Since no patient could recall the contents of the tape played, it is unlikely that the suggestion was processed consciously. These findings are consistent with earlier reports⁹⁻¹³ that a perioperative message could affect the post-operative behaviour without the patient having conscious memory. These results support the belief that there can be an unconscious level of processing of auditory information during general anaesthesia¹²⁻¹⁶. PONV are among the most common and distressing symptoms after surgery²⁰. Gynaecological patients in particular, have a higher incidence of PONV²¹ and the antiemetic efficacy is often poor²². Moreover, the antiemetic drugs themselves can result in distressing sequelae²³. The incidence of PONV following major gynaecological surgery has been reported to be reduced by 41% using metoclopramide 10mg²⁴ and by 22% using 8mg tab ondansetron²⁵. In this study incidence was reduced by 24% which is comparable with the pharmacological methods. Therefore, this may be considered as an alternative to antiemetic therapy.

Acknowledgements

The authors would like to express their appreciation to Ms E. Jo-Ann Park for her assistance in the final preparation of this manuscript.

References

1. Goldman, L. Information processing under general anaesthesia: A review. *J. Soc. Med.*, 1988;81:224-227.
2. Roorda-Hrdhickova, V., Wokers, G., Bonke, B. et al. Unconscious perception during general anaesthesia demonstrated by an implicit memory task. In: Bonke, B., Fitch, W, Millar, K. eds. *Memory and awareness in anaesthesia*. Amsterdam, Swets and Zeitlinger, 1990, pp. 150-5.
3. Block, R.I., Ghoneim, M.M, Sum-Ping, S.T. et al. Human learning during general anaesthesia and surgery. *Br. J. Anaesth.*, 1991 ;66: 170-178.
4. Squire, L.R. Mechanism of memory. *Science*, 1986;232:1612-1619.
5. Graf, P. and Schacter, D.L. Implicit and explicit memory for new associations in normal subjects and amnesic patients. *J. Exp. Psychol. (Learn Mem. Cogn.)*, 1985;11:501-518.

6. Ghoneim, M.M. and Block, R.I. Learning and consciousness during general anaesthesia. *Anesthesiology*, 1992;76:279-305.
7. Ghoneim, M.M. and Block, R.L Memory for events during anaesthesia does occur: An anaesthesiologist's viewpoint. In: Sepel, P.S., Bonke, B. and Winograd, E. eds. *Memory and awareness in anaesthesia*. Englewood, Cliff, N.J, Prentice Hall, 1993, pp. 452-8.
8. Meikle, P.M and Rondi, G. Memory for events during anaesthesia has not been demonstrated: A psychologist's viewpoint. In: Sebel, P. S., Bonke, B., Winograd, E. eds. *Memory and awareness in anaesthesia* Englewood Cliffs, N.J: Prentice Hall, 1993, pp. 476-97.
9. McLintock, TIC., Aitken, H., Downie, C.F.A. et al. Postoperative analgesic requirement in patients exposed to positive intraoperative suggestions. *Br. Med. J.*, 1990;301:788-790.
10. Hutchings, D. The value of suggestions given under anaesthesia; A report and evaluation of 200 consecutive cases. *Am. J. Clin. Hypn.*, 1961 ;4:26-29.
11. Evans, C. and Richardson, PH. Improved recovery and reduced postoperative stay after therapeutic suggestion during general anaesthesia. *Lancet*, 1988;ii:491-493.
12. Liu, W.H.C., Standen, P.J. and Aitkenhead, AR. Therapeutic suggestions during general anaesthesia in patients undergoing hysterectomy. *Br. J. Anaesth.*, 1994;68:277-281.
13. Wolfe, L.S. and Millet, J.B. Control of postoperative pain by suggestion under general anaesthesia. *Am. J. Chin. Hypn.*, 1960;3: 109-112.
14. Van der Laan, W.H., van-Leeuwen, B.L., Sebel, P.S. et al. Therapeutic suggestion has no effect on postoperative morphine requirements. *Anesth. Analg.*, 1996;82:143- 152.
15. Millar; K. Efficacy of therapeutic suggestion presented during anaesthesia: Re-Analysis of conflicting results. *Br. J. Anaesth.*, 1993;71 :597-601.
16. Moerman, N., Bonke, B. and Oosting, J. Awareness and recall during general anaesthesia. *Anesthesiology*, 1993;79:454-464.
17. Sardin, it and Norstrom, O. Awareness during total IV anaesthesia. *Br. J. Anaesth.*, 1993;71 :782-787.
18. Evans, C. and Richardson, P.H. Improved recovery and reduced postoperative stay after therapeutic suggestion during general anaesthesia. *Lancet*, 1988;ii:491 -493.
19. Boeke, S., Duivenvoorden, H.J., Verhage, F. et at. Prediction of postoperative pain and duration of hospitalization using two anxiety measures. *Pain*, 1991 ;45:293-297.
20. Matins, A.F., Field, J.M, Nesting, PMM. et ah. Nausea and vomiting after gynaecological laparoscopy: Comparison of pranicidation with oral ondansetron, Metoclopramide and placebo. *Br.J. Anaesth.*, 1994;72:23 1-233.
21. Madej, T.J. And Simpson, K.H. Comparison of the use of domperidone, droperidol and metoclopramide in the prevention of nausea and vomiting following gynaecological surgery in day cases. *Br.J. Anaesth.*, 1986;58:879-883.
22. Rowbotham, D.J. Current management of postoperative nausea and vomiting. *Br. J. Anaesth.*, 1992;69:(Suppl. 1):46s-59s.
23. Cohen, SE., Woods, WA. and Wyner, J. Antiemetic efficacy of droperidol and metoclopramide. *Anesthesiology*, 1984;60:67-69.
24. Goldman, L. Factors determining the probability of recollection of intraoperative events. In: Bonke, B., Fitch, W., Millar, K. eds. *Memory and awareness in anaesthesia*. Amsterdam, Swets and Zeittinger, 1990, pp. 45-9.
- 25 .Dupeyron, J.P., Conseiller, C., Levalet, M et al. The effect of oral ondansetron in the prevention of postoperative nausea and vomiting after major gynaecological surgery performed under general anaesthesia. *Anaesthesia*, 1993;48:214-218.