

# Concurrent surgeries in ENT: a cost-effective and safe approach in patients requiring multiple definitive procedures

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## Abstract

Treatment of the predisposing factors that are identified in the nose and throat in several ENT diseases is mandatory prior to the definitive management of the latter. When surgical management is indicated it has been traditional to use staged procedures. This study was undertaken to assess the role of concurrent surgical procedures in ENT and evaluate their cost-effectiveness compared to similar staged procedures. This was a retrospective case series of 100 consecutive patients undergoing concurrent and similar staged ENT surgical procedures. On analysis, it was noted that the average duration of surgery, anaesthesia and hospital stay was significantly less in the concurrent procedures group than in the staged procedures (2.35/3.1 hours; 3.05/3.30 hours and 2.5/6.5 days, respectively). The average hospital bill for the concurrent procedures was also lower than for the staged procedures. Hence, in patients requiring multiple ENT surgical procedures for definitive treatment, concurrent procedures are more cost-effective than staged procedures and should be considered the treatment of choice in a tertiary care centre.

**Key words:** Delivery of Health Care; Otolaryngology; Cost–Benefit Data

## Introduction

Concurrent surgeries in ENT have traditionally been adenoidectomy with myringotomy/grommets. This is universally accepted.<sup>1,2</sup> In several ENT diseases, especially suppurative otitis media/sinusitis, predisposing factors have on many occasions been identified in the nose and throat. Treatment of this focus of infection is recommended prior to specific management of the former. When surgical indications are present it has been accepted practice to perform them as staged procedures.<sup>1,2</sup> To date there have been only two reports of other concurrent procedures in ENT, both of which were done as emergencies. One was concurrent craniotomy and mastoidectomy done in a series of 36 patients for the treatment of otogenic intracranial abscess.<sup>3</sup> The second was bilateral simultaneous hearing preservation mastoidectomy<sup>4</sup> done in a series of three patients with otogenic meningitis secondary to bilateral suppurative otitis media. Both these reports were from our hospital in India.

The number of common ENT conditions requiring surgery at a tertiary referral hospital in a developing country such as India is high. A large proportion of these patients come a long distance, from the northern part of the country. Also, a fair number of the patients needed more than one ENT

procedure. Delay in the surgery and multiple admissions are additional economic constraints to the patient. It was in this context that concurrent ENT surgeries at a single anaesthetic sitting were considered. This is the first report of elective concurrent ENT procedures. This study was undertaken to determine the cost-effectiveness and role of concurrent ENT surgical procedures compared to similar staged procedures.

## Patients and methods

This was a retrospective analysis of 100 consecutive patients who underwent multiple ENT procedures in one sitting and similar staged procedures during the period 1995–2001 in the Christian Medical College at Vellore in South India. Patients who underwent adenoidectomy/tonsillectomy with myringotomy/grommets are excluded from this study. The duration of surgery, anaesthesia, hospital stay and inpatient bill were assessed and analysed. These were compared with the same parameters of similar surgeries done in a staged manner.

## Results

One hundred patients undergoing concurrent ENT surgeries and similar staged ENT procedures were

TABLE I  
LIST OF CONCURRENT ENT SURGICAL PROCEDURES

Concurrent surgeries	Number
Cortical tympanoplasty and septoplasty	51
Septoplasty and tonsillectomy	12
Modified radical mastoidectomy and tonsillectomy	9
Cortical tympanoplasty and tonsillectomy	4
Myringoplasty and septoplasty	4
Myringoplasty and tonsillectomy	3
Modified radical mastoidectomy and adenoidectomy	2
Modified radical mastoidectomy and septoplasty	2
Septoplasty and UVPP	2
Tonsillectomy and FESS	2
Tonsillectomy and thyroglossal cyst excision	2
Tonsillectomy and preauricular sinus excision	2
Cortical tympanoplasty and FESS	2
Cortical tympanoplasty and adenoidectomy	1
Modified radical mastoidectomy and nasal polypectomy	1
Myringoplasty and FESS	1
Tonsillectomy and microlaryngoscopy	1
Total	100

analysed. Table I shows the types of surgical procedures carried out. The ages of the patients ranged from five years to 51 years, with a mean of 29 years. There were 81 males and 19 females. Cortical tympanoplasty and septoplasty were the commonest procedures that were performed.

- **The subject of the outcome of multiple procedures administered as a single episode of health care has been explored, in part, in a recent article in the *Journal* (Murray *et al.*, *JLO* 117(9): 707-9**
- **The obvious rationale for concurrent procedures is potential cost saving as well as patient convenience, but the potential disadvantages are that one procedure might adversely affect the outcome of another, or that the discomfort to the patient might be increased**
- **This article looks at cost-benefit rather than outcome, and finds, perhaps unsurprisingly, that the average hospital costs as well as the overall length of stay and of surgical and anaesthetic time are reduced if dual treatments are concurrent rather than staged**

The various parameters in the concurrent group and the staged group are shown in Table II and Figure 1. There were no major immediate complications in either group. The average hospital bill for concurrent procedures was Rs10,312, and that for the staged procedure was Rs13,812 (Figure 2).

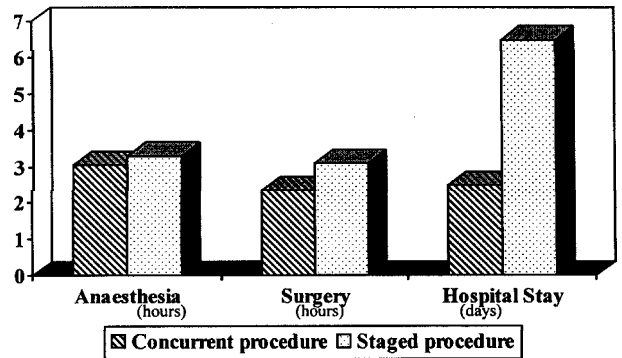


FIG. 1

Mean duration of various parameters.

## Discussion

There have been two reports of concurrent/simultaneous definitive procedures for the emergency treatment of otogenic intracranial complications.<sup>3,4</sup> However, concurrent procedures to be done electively in patients requiring multiple ENT definitive procedures have not been analysed and reported. Our study shows that concurrent ENT procedures have a shorter duration of anaesthesia, surgical time and hospital stay and a lower inpatient bill than when those procedures are done in a staged manner, as practised elsewhere. This is because in staged procedures the patient is subjected to at least two separate admissions and anaesthetic sittings. Although in the staged procedure the cost difference is only Rs3500 higher than the concurrent procedures, this does not take into account all the hidden costs of a second admission to the patient, ie travel expense a second time/outpatient stay in the lodgings waiting for the second surgery/loss of earning or school days for the patient and the attendant.

## Conclusion

This retrospective study of 100 patients requiring multiple ENT procedures shows that:

- (1) compared to similar staged surgical procedures, concurrent ones have a shorter duration of anaesthesia/surgical time and hospital stay, and a lower inpatient bill
- (2) there were no major immediate complications in either group.

Hence concurrent surgical procedures, besides being safe, are most cost-effective than similar staged procedures, and should be considered in patients requiring multiple ENT procedures for definitive treatment.

TABLE II  
CONCURRENT VERSUS STAGED ENT PROCEDURES

Parameters	Concurrent			Staged		
	Mean	Range	SD	Mean	Range	SD
Duration of anaesthesia (hrs)	3.05	1.0-4.45	1.45	3.30	1.15-5.0	2.00
Duration of surgery (hrs)	2.35	0.75-4.3	1.08	3.1	1.15-4.45	1.20
Duration of hospital stay (days)	2.5	1-5	1.07	6.5	3-8	0

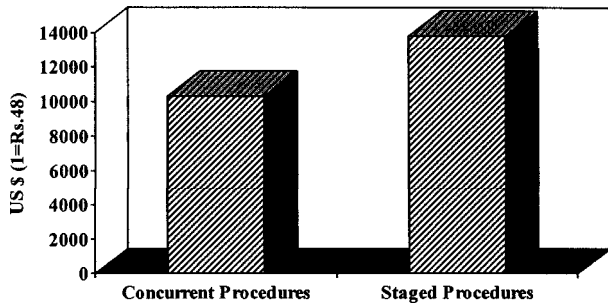


FIG. 2  
Average cost of hospitalization.

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