

Letters to the Editor

KTP-532 laser tonsillectomy – a potential day-case procedure?

Dear Sir,

I read with interest an article published in *JLO* June, Vol. 109, by Raine *et al.*, on KPT-532 laser tonsillectomy and was horrified to learn their overall incidence of 31 per cent complications and 19 per cent incidence of secondary haemorrhage. I totally disagree with their conclusion that KTP laser tonsillectomy compares unfavourably with dissection tonsillectomy.

We have now performed a total of 576 KTP-laser tonsillectomies in adults and children in Tyrone County Hospital, Omagh, N. Ireland, in the last four years. Our overall incidence of complication is 1.38 per cent, which is reactionary haemorrhage (one patient) and secondary haemorrhage (seven patients). In our series secondary haemorrhage accounted for 1.04 per cent, excluding one case of Von Willibrand disease. We had no other complications.

It seems to me that the two most important factors have not been taken into account by the surgeons in that study. The laser physics and the technique. The article does not specify how many cases were operated with six watt power. It states that a power of 6–12 Watt was used. In my opinion, understanding the KTP laser tissue interactions a minimum power for an adult tonsillectomy would be nothing less than 12 W and sometimes up to 14 W. In fact, a power of 12 to 16 Watts have been suggested (Kuhn, 1988) for laser tonsillectomy. A 6–10 Watt power is inadequate to cut through the fibrous tissue which we all encounter in adult tonsillectomy. It is also not sufficient to have an effective coagulation mode. This would result in bleeding which will obscure the precise plane for lasing and consequently difficult operation. A low power setting with a longer time exposure of tissues to the laser energy will inevitably result in more lateral thermal damage. We would not use 10 Watts KTP power even for children's tonsillectomy as I feel this is most inadequate for removal of the tonsil.

The energy fluence, i.e. total amount of laser energy imparted on the tissues, is the most important parameter which is dependent on the wavelength, power, power density, traction on the tissues and the **length** of time the laser energy is applied to the tissues.

Secondly, the **technique** of laser tonsillectomy is of paramount importance. One is not dissecting the tonsil with a fibre but essentially vaporizing the tissues, starting from the lower pole of the tonsil,

between the tonsil capsule and the bed, thus gradually 'peeling' off the tonsil from its bed. If blood vessels are encountered they are coagulated. We have shown histologically that the lateral thermal damage is minimal (2–3 hundred microns) or non-existent on the tonsil bed.

The article does not mention the size or the calibration of the endostat fibre which also affects the energy fluence. The very fact that the authors had to use diathermy implies to me that the correct technique has not been used for lasing the tonsil. The very high incidence of secondary haemorrhage is most likely to be due to a combination of diathermy damage and lateral thermal effect on the tonsil bed resulting in the necrosis of the tissues. In the early part of the series we reviewed many patients regularly post-operatively to observe the healing process in the tonsil fossa and found that healing time is the same in both laser and diathermy techniques. We also found no evidence of areas of necrosis in the tonsil bed. We have **never** needed diathermy during laser tonsillectomy.

Discussing the logistics of the laser tonsillectomy in the article it is stated that laser had to be turned on and off throughout the procedure which took significant time, and could only operate maximum five cases. We have never found this to be necessary and have operated 10–12 patients in a given operative session with only one anaesthetist for the laser list without an additional circulating nurse. We would perform at least 50 to 60 tonsillectomies from one endostat fibre (approximately costing £75) and hence do not consider laser fibres to be a costly consumable.

The authors described two cases of altered taste due to neurapraxia of the lingual nerve; however, I feel that this complication of altered taste has no relevance to the lingual nerve. The lingual nerve supplies common sensation to the anterior two-thirds of the tongue with a contribution from the chorda tympani for special sensation (taste). It seems to me that excessive lateral thermal damage near the lower pole of the tonsil on the tongue base must have affected the finer lingual branches of the glossopharyngeal nerve. This nerve supplies the posterior one-third of the tongue for taste sensations and damage to these nerve fibres probably contributed to this complication.

Last but not least, I have been selectively quoted in the article as saying KTP-laser tonsillectomies are more suitable for children. However, I am also on record in saying to those who have phoned us in the past, and in our KTP laser workshops that I would

recommend adult tonsillectomy only after sufficient experience in using KTP laser and learning the new technique. There is no doubt that children's tonsils are relatively easier to operate with KTP laser due to overall absence of fibrosis and hence minimal chance of losing the plane while lasing.

On the basis of a pilot study of 54 adult patients, the authors' condemnation of the technique is unjustified and the conclusion that high complication rate, cost and inconvenience of this technique is alarmist and unnecessary. In our experience, in addition to a very low complications rate, there are several other advantages of laser tonsillectomy, such as very short procedure, bloodless surgery in the majority of patients, reduced post-operative pain for the first week as also observed by others (Oas and Bartels, 1990), reduced post-operative morbidity, and early discharge from the hospital.

Our experience with a very large series of KTP laser tonsillectomy both adults and children is under preparation with statistical analysis and will be published in due course.

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Oas, R. E., Bartels, J. P. (1990) KTP/532 Laser tonsillectomy: A comparison with standard technique. *Laryngoscope* 100: 385–388.

Authors' reply

Dear Sir,

We note with interest the not unexpected consecutive responses from both the manufacturers of the KTP-laser (Letters to the Editor, *JLO* 109, 1234–1235) and Mr Kaluskar regarding the above paper.

As the title suggests this *prospective* study was undertaken to address a specific question, namely would the use of an expensive laser confer sufficient advantage or benefit to surgeon, patient or hospital to allow for the *possible* consideration of its use for adult tonsillectomy as a *day-case* procedure?

Traditional surgical approaches for tonsillectomy are well proven to be safe, convenient and effective in children (and in the case of guillotine tonsillectomy, quick!) as usually practised in this country. This group of patients is not generally perceived to be a significant surgical problem.

Most ENT surgeons would acknowledge that adult tonsillectomy is a different proposition, particularly when there may be a history of peritonsillar cellulitis or abscess formation. Such cases often show a complete obliteration of fascial planes making a true 'dissection' approach difficult. It was in this type of adult case that the role of KTP-532 laser was perceived to be of maximum potential benefit.

The comments regarding laser physics are comprehensive and of course are well documented in existing literature. The settings used were based upon recommendations made by the manufacturers who supplied the laser, and in practical terms appeared to be entirely satisfactory. As stated in the paper, statistical analysis of total joules used showed no significant difference between the cases of secondary haemorrhage, delayed post-operative pain or otherwise uneventful cases suggesting that lateral thermal effects were not necessarily the main cause of the complications encountered.

The surgeons who performed the bulk of the procedures generally found that the surgical technique for removal of the tonsils was straightforward if not satisfying! The secondary haemorrhage rate reported was therefore a somewhat surprising finding. However, in particularly 'difficult' and 'adherent' tonsils *precise bipolar* diathermy was needed to control bleeding from larger blood vessels.

Fifty per cent of the cases studied could not have been discharged on a day procedure basis. The overall 31 per cent complication rate quoted included a range of complications of which 19 per cent were due to secondary haemorrhage and all of these cases required only conservative management. As stated these complications were not confined to any initial 'learning curve' time period and are therefore of more significance.

Delayed healing and secondary infection is well documented following KTP-532 and other types of laser tonsillectomy as is the *initial* reduction in post-operative pain (Oas and Bartels, 1990; Hendrick and Myers, 1995). It is also recognized that there may be a subsequent heightening of post-operative pain from a 'lasered' tonsil when compared to a 'surgical' tonsil (Toma *et al.*, 1995). This may be of sufficient degree to override the initial reduction in pain and may indeed precipitate readmission. These factors are of clear relevance when addressing the question posed by this paper.

We note Mr Kaluskar's personal and anecdotal experience in his unpublished series which we assume to contain a mix (unknown) of both adult and paediatric patients. It will clearly be of interest to all surgeons contemplating the use of the KTP-532 laser in adult tonsillectomy to review a properly controlled and statistically prepared prospective study to allow proper assessment of its place in the surgical weaponry available for this procedure.

As with many other techniques and surgical innovations, laser tonsillectomy performed in adults is not necessarily a bed of roses and, based upon the findings in our study, would certainly not appear to confer particular advantages for considering its use to facilitate this operation as a *day case procedure* – the specific question addressed by our paper.

M. Raine,
H. B. Whittet,
N. Marks,
R. Ryan.

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Palatal myoclonus affected by neck posture

Dear Sir,

We read with interest the paper entitled 'palatal myoclonus affected by neck posture' by Tomkinson *et al.* (January 1995). Whilst the authors correctly stipulated that the treatment of persistent palatal myoclonus is generally unsatisfactory, we draw their attention to the encouraging results obtained with the injection of clostridium botulinum toxin into the palatal muscles (Saeed and Brookes, 1993). The three patients presented in our report over two years ago continue to undergo toxin injection every four to six months and to date remain free of their distressing and intrusive tinnitus.

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- botulinum toxin in palatal myoclonus. A preliminary report. *Journal of Laryngology and Otology* **107**: 208–210.
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Author's reply

Dear Sir,

We are grateful to Saeed and Brookes for highlighting the success they have experienced with clostridium botulinum toxin in patients with palatal myoclonus. The application of this potent neurotoxin in the treatment of this condition was first described by Le Pajolec *et al.* (1990) and it is encouraging to learn that the three patients initially described by Saeed and Brookes in 1993 have continued to benefit from this therapy.

Botulinum toxin has been applied in various forms of dystonia and movement disorders, in many cases to great benefit (Jankovic, 1994). However, only time will tell if it will live up to its initial promise in the treatment of palatal myoclonus.

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