Introduction:

Although Phonosurgery has been the mainstay of treatment for benign vocal fold lesions for decades, advanced diagnostic modalities improved techniques of voice therapy and vocal hygiene have helped managing them in a more precise and better way.

Objective:

To study the role of phonomicrosurgery in benign vocal fold lesions.

Methods:

This prospective study was undertaken in a tertiary health care centre for a period of one-year (October 2012) to September 2013, thirty two patients had undergone phonosurgery for vocal fold polyps (n = 14), vocal fold cysts (n=8), vocal fold nodules(n=3), Sulcus vocalis (n=2), vocal fold papilloma (n=1), vocal fold angioma (n=1), keratotic patch (n=2) and vocal fold oedema (n = 1).

Their average age was 41 years of which 62% were women and 69% were smokers. Postoperative voice therapy was given to sixteen patients. Post-operative clinical evaluation was available for data analysis in 30 patients (92%). Voice quality was assessed using the voice handicap index-10 questionnaire (VHI-10), direct laryngoscopy was performed pre & post operatively and self-reported assessment. The median follow-up time was 4 months.

Result:

Thirty out of 32 patients showed objective improvement in fibreoptic laryngoscopy post treatment. Two patients were noncompliant to voice therapy and showed recurrence of their pathologies. Mean VHI 10 score showed significant improvement from 8 in the preoperative period to 3 in the postoperative period.

Conclusion:

Phonosurgery is a quick and effective treatment with uncommon and transient post-operative complications. Pre and postoperative voice therapy plays an integral role in combination with phono-micro surgery enhances the outcome in patients with benign vocal fold lesions. Objective assessment of the voice pre- and post-operatively should be used consistently to evaluate the additional impact of pre- and postoperative voice therapy.
carried out on a group of 32 adults patients who presented to the "Voice Clinic" run and managed by the Department Of ENT & Head Neck Surgery, Ramakrishna Mission Seva Pratishthan, Vivekananda Institute of Medical Sciences, Kolkata with a primary symptom of persistent hoarseness for at least 4 weeks. The study was conducted from October, 2012 to September, 2013. Total number of 14,652 patients attended to the ENT clinic during this period and out of them 61 patients were advised to attend "Voice Clinic".

We used following instruments to diagnose benign pathologies in our voice clinic:

i. 70 degree 8 mm rigid telescope
ii. Single chip camera with TV monitoring
iii. Halogen light source and fibre optic cable

At first, a detailed history was taken of all selected patients, using a specially designed proforma. Then a thorough clinical examination was undertaken and objective evaluation performed by 70 degree rigid fibreoptic laryngoscope to diagnose benign vocal fold lesions. Patients with cyst, nodule, edema underwent voice therapy and vocal hygiene for initial 6wks and those patient who failed to resolve after voice therapy underwent phonosurgery in form of microlaryngeal surgery.

Voice handicap index 10 questionnaire (VHI 10) was used to assess pre & post operative subjective voice from all the patients. Pre- and postoperative voice therapy, smoking status, duration from the first visit in the outpatient clinic to surgery, post-operative follow-up time and post-operative complications were recorded.

**Results:** In the present study total number of 61 patients attended 'Voice Clinic' from October, 2012 to September, 2012. 32 (52.5%) patients were male and 29 (47.5%) were female. Duration of presenting symptoms varied from 3weeks to 10 years with an average of 19 months.

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<th>Table 1- showing male : female ratio of all patients</th>
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<tr>
<td>Total no. of patients</td>
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<td>Male</td>
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Out of 61 patients 45 presented with hoarseness. Amongst them, 5 patients suffering from hypothyroidism and were on medication (Thyroxin sodium tablets).

Out of these 61 patients 32 underwent microscopic phonosurgery for various pathology like-

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<th>Table 2: showing distribution of pathology</th>
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<td>Total no. of patients</td>
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<td>Vocal polyp</td>
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Vocal fold cyst | 8 | 25%
Vocal fold nodule | 3 | 9.37%
Vocal fold papilloma | 1 | 3.12%
Sulcus vocalis | 2 | 6.25%
Keratotic mass of vocal fold | 2 | 6.25%
Vocal fold angioma | 1 | 3.12%
Reinke's oedema | 1 | 3.12%

Significant improvement was noted in VHI 10 score of the post operative patients during subsequent follow ups. The mean VHI 10 score of the 32 patients in the post op period was 3 compared to 8 in the pre operative period.

An objective assessment by rigid laryngoscopy was performed in the follow up visits to look for residual phonatory gap, mucosal edema or remnants of lesions. Only 2 patients had mid phonatory gap in the post operative visits & they were non compliant to voice therapy.

**Discussion:**

In the present study 30 out of 32 (85%) patients had improved voice quality at the last follow-up after PS. These results are in concordance with Zeitels et al, who prospectively investigated treatment outcomes in 185 singers who had undergone PS and vocal rehabilitation. In their study a total of 182 patients (98%) reported voice improvement after surgery.

Most authors agree that the optimal treatment of benign lesions of the larynx is complex and includes several factors such as good patient compliance, the surgical method applied and post-operative voice therapy. In our study, 46% of the patients were offered post-operative voice therapy. These patients were primarily professional voice users as other patients were only offered voice therapy if their voice was hoarse one month after surgery. Consequently, 54% of the patients did not receive post-operative voice therapy including those who were satisfied with their voices despite slight hoarseness. These findings may explain why voice therapy immediately after surgery has a high success rate.

As the vast majority of patients had normal voices after three months, their visits could be terminated, which yielded a median follow-up period of 3.9 months, which is considerably shorter than in other studies.

**Conclusion:**

Phono-micro surgery is a quick and effective surgical procedure entailing only few complications. Meticulous removal of benign vocal fold lesion with preservation of normal ultrastructure is essential for better outcome. All
but two patients (85%) in this study benefitted from surgery and 85% had a normal voice post-operatively.

References: