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A NEW TYPE OF "NEEDLE BIOPSY" FORCEPS FOR ENDOLARYNGEAL MICROSURGERY

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SUMMARY

In an effort to carry out precise excisional biopsy deep enough within the laryngeal structure, a new type of "Needle Biopsy" forceps has been designed and is now commercially available. The clinical advantages of this new forceps include reduced bleeding, minimum reaction, and less scarring than with conventional laryngeal forceps. The availability of this instrument provides laryngeal surgeons with a more precise management of laryngeal lesions such as carcinoma.

INTRODUCTION

In the management of organic laryngeal lesions such as neoplasms, particular attention should be paid to the pathological entity of the disease. Depending upon evaluation as a malignancy and decision as to histological type, the further planning of the therapeutic program could vary. Usually in our daily clinic, indirect laryngoscopy, together with X-ray examinations including laryngograms, provides useful information in this process. The final judgment, however, should be made based upon a histological examination of removed material from the lesion.

Microscopic endolaryngoscopy has been now well established as a technique which makes unrecognized lesions in mirror laryngoscopy and/or ordinary direct laryngoscopy visible, and causes multiple exacting biopsies with small laryngeal forceps to be performed. Nevertheless, we may encounter several cases in which appropriate surgical specimens can not be obtained even with this method.

INDICATION

For example, there are certain conditions in which the superficial epithelium looks normal, although the unilateral ventricular fold is swollen, indicating some bulge beneath the surface. Also, in some cases of early laryngeal cancer after radiation therapy is completed, we sometimes suspect a recurrence deep beneath the epithelium despite appearances. In addition, we

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often notice that conventional types of laryngeal biopsy forceps are not ideally suited for particular cases, such as the ventricular type of laryngeal cancer, since the ventricles are not well exposed.

The "Needle Biopsy" forceps for endolaryngeal microsurgery are specially designed for obtaining specimens deep enough within the laryngeal structure in those cases with less bleeding and minimum scarring, resulting in a more precise histological evaluation of the lesions.

INSTRUMENTS

Fig. 1 shows a picture of entire system of the instrument, which is composed of three parts. At the bottom, a long needle attached with a handle serves as a pilot for the biopsy. In the middle, a mandrin to be inserted into the needle is shown. At the top are the needle biopsy forceps, which are utilized for grasping the specimen. The tip of the foreceps(Fig. 2) is equipped with two hooks facing each other, which permit a biopsy deep enough beneath the surface.

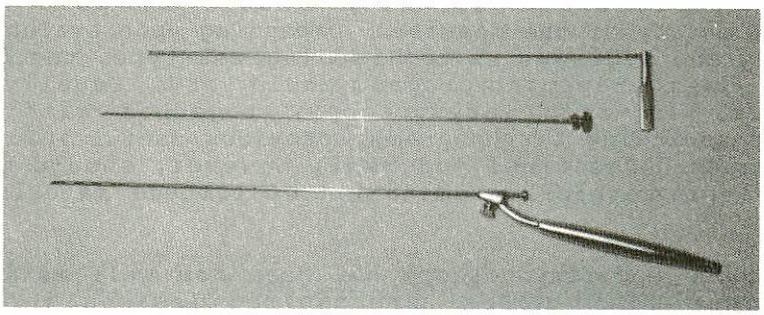

Fig. 1 Entire system of the instrument.

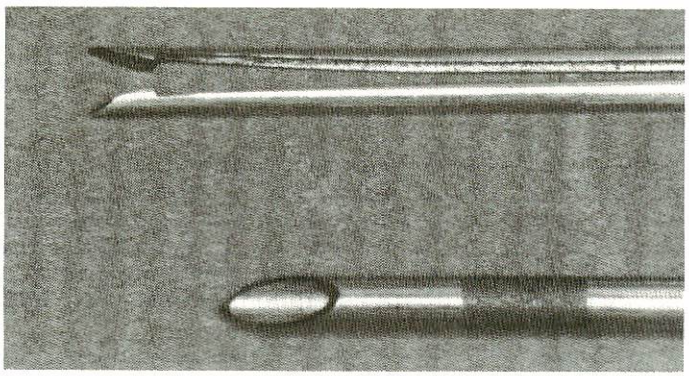

Fig. 2 Tip of the forceps.

TECHNIQUE

The scheme of the instrument (Fig. 3) shows how this system works. At first, only the long needle together with the mandrin is aimed at the location directly above the lesion in question. The needle is further advanced, penetrating the surface epithelium which covers the lesion. The scale marked around the needle is useful for estimating the depth up to the tip. Then, after the mandrin is withdrawn, the biopsy forceps with hooks should be inserted into the needle. The tip of the forceps is designed to stop 5 mm beyond the tip of the needle. By rotating the handle of the forceps, the specimen can be resected and should be removed together with the forceps. The tip grasps and holds the tissue without the covering epithelium.

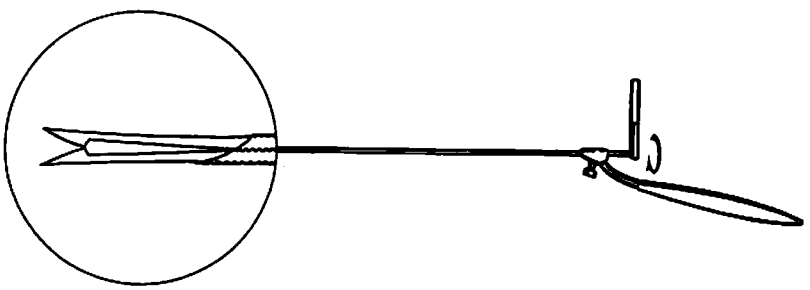

Fig. 3 Scheme how this system works. Note the handle to be rotated and pulled out with the needle.

RESULTS

This new instrument has been preliminarily used for unilateral swelling of the ventricular fold and a recurrence of laryngeal cancer after radiation therapy. The volume of each specimen is appropriate for pathological examination and the bleeding during and after operation is substantially reduced compared conventional forceps.

REFERENCES

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