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Endolaryngeal Thread Guide Instrument (ETGI)

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New solution for endoscopic laryngeal surgery

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Endolaryngeal Thread Guide Instrument (ETGI)

A new name in the world of ENT called as **Endolaryngeal Thread Guide Instrument „ETGI"**.
This revolutionary instrument made a life of thousands of patients who suffered from breathlessness due to dysfunction of vocal cords either due to paralysis or stenosis of vocal cord and relatively having tracheostomy easier. They could go back to their normal life with more confident and more respect without tracheostomy.

After surgery by ETGI technique, this product has been a most successful product in the world of ENT with great reputation in many countries. We hope this fantastic instrument will make the life of the patients including both adults and children with similar problem easier and better.
We achieved satisfactions of both patients and surgeons who has been using the ETGI and who has been treated by it. Not at least but at last reduce the cost of the medical expenses both for hospitals and patient in all aspects like reducing the cost of treatment, time in operating anesthesia time and technique, short post op. period, great outcome.

The idea was to develop an instrument which has the following specifications:

- safe to use for both patient and surgeon
- easy to handle
- simple design and operating technique
- easy to take apart in order to sterilization
- quick access
- quick in performance
- great result and high satisfaction rate

The purpose for developing the Endolaryngeal Thread Guide Instrument (ETGI) was to simplify the complicated operation techniques and increase the quality of life of patient nearly to 99%.
Its use is very important in the case of the vocal cord paralysis, posterior vocal cord stenosis, ankylosis of cricoarytenoid joint, disease of muscles and nerves of vocal cords, disease effecting the brain causing dysfunction of vocal cords, injuries to the neck and post traumas.

The dysfunction of vocal cord leads to respiratory disorder, but especially if both sides are affected then the patient might be in the life threatening situation and also suffocate.

Many authors try to solve this problem. Crumly (1993) suggested a transverse vocal cord resection. Others try to solve this complication by open neck surgery technique like partial resection of the vocal cord or by using laser and removing some part of the vocal cord and causing irreversible destruction of anatomical structure of larynx (vocal cord) which effect on patient's voice, also low efficiency in breathing. These procedure nearly had some drastic failure in some extend and later needed further surgery for more destructing solution like completing with a partial arytenoidectomy and keep the trache open by tracheostomy, which of course changes the quality of life and voice drastically.

The solution is a very simple procedure which is lateralization of one or both arytenoids cartilage called *arytero-lateralisation* by using **ETGI**.

Lateralization of the arytenoid cartilage by using ETGI and as its consequence lateralization of vocal cord, then fix the cartilage by suturing it through the neck with trans-cutan knots.

In case of the stenosis of arytenoid cartilage with a help of special instrument called *Scyt* can cut the scar tissues around the joint and release of stenotic part of the arytenoids joint. By using the ETGI the vocal cord positioned to the most lateral side and then make the suturing.

The advantages of the ***aryteno latero fixation*** of the arytenoids cartilage:

- minimal invasive technique
- less maintenance cost
- less cost for general anesthesia, short period
- quick procedure
- quick result
- stable base for the thread
- saves the vocal cord structure
- can be done without tracheotomy
- reversible to a great extent
- good results on the long term
- increase the quality of life
- low post op. period
- great psychological effect
- satisfaction for both patient and surgeon

Bilateral lateralization and fixation of arytenoid cartilage can be a good solution with the ETGI, irrespective of the cause of the restriction of movement.

The procedure is:

- A loop is placed around the arytenoid cartilage safely around each cartilage separately in each sides and quickly (a double loop can be made with a single maneuver for more stability).
- Then make knot to keep the arytenoid cartilages fix under the skin, over the platysma.
- Close the skin.

The benefit:

- Keep the thread on a sterile area all through the operation and as a result reduce the infection and re-stenosis.
- Knot can be removed if the movement of the vocal cord is back.
- Develop an on purposed re-stenosis of arytenoid joint and keep the cartilage in that required position.

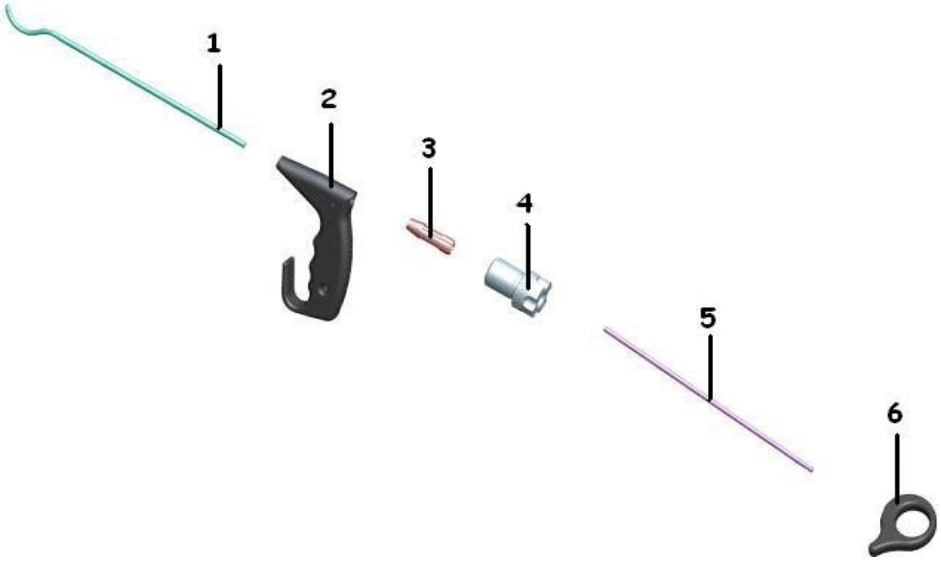
The principle of ETGI is based on a built in movable curved blade with a hole at its tip in order to guide a thread in or out between the outer surface of the neck and the laryngeal cavity. The instrument consists an external pipe **(1)** which is curved at its blade holding distal end in order to be fitted in the mid-sized closed laryngoscopes. The second part is a rod **(5)** placed in the former sheath with a freely rotating thumb holder **(6)** at the proximal end and a curved blade which is appropriately inflected to the curvature of the external pipe **(1)**. The fix but flexible connection between the blade and the rod **(5)** ensures a smooth and forceful moving the former one inserted in the tip of the instrument in or out by pulling or pushing the thumb holder **(6)** by thumb. The third part is an ergonomic handle **(2)**, what also serves as a handle to hold the instrument in a straight position.

The external pipe **(1)** which is curved at the end in a degree for supporting the movement of the blade smoothly in the external pipe **(1)** and also the curved part designed in way in order to be fitted in the laryngoscope. The direction of curved part can be changed by turning the external pipe **(1)** to left and right and with the help of the bleed clamping screw **(4)** can be fixed in the desired direction and it can be fixed with the key. After inserting the ETGI blade in the external pipe **(1)** by inserting the rod inside the handle through the patron and the bleed clamping screw **(4)**, by turning the rod fixing the ETGI blade in its position. Then screw the thumb holder **(6)** in its position in the rod **(5)** and by screwing it to the end it reaches to the extention that it rotate freely.

By inserting the thumb in the thumb holder **(6)** and holding the handle you are able to reach the maximum power to push the blade out of the instrument.

The Endolaryngeal thread guide instrument (ETGI) parts:

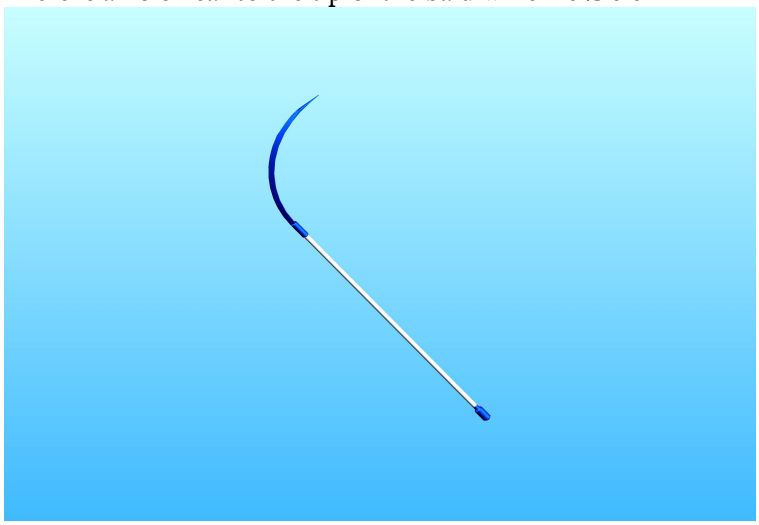
1. External pipe
2. Handle
3. Patron
4. Bleed clamping screw
5. Rod
6. Thumb holder
7. Key



Installation:

1- Hold the handle and insert the reeled pipe from the front side, and push it inside till it comes out from the head part of the handle.
2- Then from the rear end, insert the patron which will encompass the pipe and fix it with the bleed guide screw.

Blade:
There is a hole near to the tip of the bald which is Ø0.8 mm.



3- Insert the special blade in the external pipe and then from behind insert the rod and turn it till it fixes the blade.
4- Then insert the thumb holder to the other end of the rod and turn it till it reach the free rotating zone.
5- Now you can move the blade smoothly with the help of your thumb back and forth.

Note: Both ETGI and ETGI blade are not steril and need to be sterilized before usage!

Disassembly:

- Hold the handle(2) in your hand.
- The blade has to be retracted and the rod(5) connecting the thumb holder(6) can be removed by slightly pulling out the thumb holder (6) and rotating anti-clockwise until it comes off the rod(5).
  The blade should not be stretched!
- Rotate the rod(5) anti-clockwise until the blade gets loose, and you can eject the blade by pushing the rod(5) slightly inward.
- Now you can remove the blade using forceps.

Important: You have to be careful not to manually remove the blade because the sharp sides of the blade can cut your hands. When the blade is removed, it has to be disposed in the sharp hazardous waste.
Now the rod can be pulled out of the external pipe(1).

- Loosen the bleed clamping screw(4).
- Pull out the external pipe(1) from the handle(2).
- Unscrew the bleed clamping screw(4) and remove the patron(3) from the slot.

Methode for cleaning and sterilization:

Ultrasonic cleaning or instrument washing machine are the best and most effective way to clean the instruments. If any of them are not available observe the following steps:

Rinse cycle:

1. Immediately after surgery, make sure that the sharp blade is removed and disposed in a sharp bin. Seperate all parts from each other and have to be fully rinsed under warm (not hot) running water about 30 seconds. Rinse should remove all blood, body fluids and tissue.

2. Use stiff plastic cleaning brushes (nylon, etc.) Do not use steel wool or wire brushes

3. Use preferably neutral PH(7) detergents because if not rinsed off properly, low PH detergents will cause breakdown of stainless protective surface and black staining. High PH detergent will cause surface deposit of brown stain, which will also interfere with smooth operation of the instrument.

4. Make sure all instrument surfaces are visibly clean and free from stains and tissue. This is a good time to inspect each instrument for proper function and condition. Check and make sure that all parts glide smoothly all the way.

5. Make sure all parts are dried and lubricated only by surgical lubricants after last rinse cycle and before sterilization cycle.

Automatic Washer: Please follow the instruction in your washer's manual.

AUTOCLAVING CYCLE

1. Place the clean and dried parts in sterilisation pouches.
2. Label with instrument name, date and yout inicial on the pouch and seal them properly before placing them in autoclave.
3. Make sure that all instruments remain apart, during the sterilization cycle.
4. Do not overload the sterilizer trays.
5. Allow a distance of about 1” between trays.
6. Do not stack pouches.
7. Keep a record in a log sheet.

LOW-TEMPERATURE STERILIZATION (recommended)

Gas sterilization and gas plasma systems are Low-Temperature Sterilization procedures.
Please follow the instruction manuall of your sterilization machine.

Notice:

All these procedures work with chemical agents at temperatures between 37 and 75 °C.
It is possible that the concentrations of agents will differ depending on the type, procedure and year of manufacture of the sterilizers used.
Items sterilized with ethylene oxide require adequate aeration following sterilization (and before reuse). Aeration times may vary considerably, depending on ventilation conditions and the product treated. For reliable aeration times, always consult the chemical agents manufacturer and/or observe the corresponding instructions.

If you notice any discoloration or damage to the instrument please send the complete instrument set back to MEGA KFT for repair or replacement of the defected part.
The cost of repair, replacement and postage will be paid by the purchaser.

Please strictly follow the manufacturer's instructions of the contact time of the detergent solutions.

Keep the instrument in its box for providing any damage to it.

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