



Spontaneous displacement of silastic prosthesis 10 years after type 1 thyroplasty: a case report

Tip 1 tiroplastiden 10 yıl sonra spontan silastik protez kayması: Olgu sunumu

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Implant dislocation following type 1 thyroplasty mostly results from the effects of triggering factors in the early postoperative period. A 42-year-old female patient who had had thyroplasty type 1 surgery with silastic implant, applied to our clinic with cough episodes, dyspnea and hoarseness following an upper airway infection 10 years after the surgery. In laryngeal endoscopic examination of the patient, white colored irregularity on anterior left vocal cord and left band ventricle fullness was seen. Regarding the patient's medical history, it was thought that the silastic prosthesis which had been implanted in the type 1 thyroplasty surgery might have displaced. The silastic prosthesis was removed by means of microsurgery technique through endolaryngeal way under general anesthesia. During the first month follow-up of the patient, dyspnea and hoarseness complaints were improved right away and she had no other problems. The causes and consequences of displacement of the prosthesis which rarely occurs, after thyroplasty type 1 have been discussed along with the latest data in the literature.

Key Words: Complication; implant extrusion; type 1 thyroplasty.

Tip 1 tiroplasti sonrası implant yer değişimi sıklıkla erken ameliyat sonrası dönemde tetikleyici faktörlerin etkisi ile ortaya çıkar. Tip 1 tiroplasti ameliyatı olan silastik implantlı 42 yaşında kadın hasta, ameliyattan 10 yıl sonra üst solunum yolu enfeksiyonu sonucu ortaya çıkan öksürük nöbetleri, dispne ve ses kısıklığı yakınmaları ile kliniğimize başvurdu. Hastanın endoskopik larenks muayenesinde sol vokal kord anteriorunda beyaz renkli düzensizlik ve sol bant ventrikülde dolgunluk görüldü. Hastanın öz geçmişi ile ilgili olarak tip 1 tiroplasti ameliyatında implante edilmiş olan silastik protez bloğun yer değiştirmiş olabileceği düşünüldü. Silastik protez mikrocerrahi tekniği ile endolarengeal yoldan genel anestezi altında çıkarıldı. Hastanın bir aylık takibinde nefes darlığı ve ses kısıklığı yakınmaları hemen düzeldi ve başka sorunu olmadı. Tip 1 tiroplasti sonrasında nadir görülen protezin yer değiştirmesinin nedenleri ve sonuçları son literatür verileri eşliğinde tartışıldı.

Anahtar Sözcükler: Komplikasyon; implant ekstrüzyonu; tip 1 tiroplasti.

The therapy methods used in the unilateral paralysis of the vocal cord are voice therapy, injection laryngoplasty, surgical medialization and laryngeal innervation techniques.^[1]

Medialization laryngoplasty was first described in 1974 by Isshiki.^[2] At the present day, it is a technique extensively used and proven to be successful for the vocal cord medialization.^[3] Autografts

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(such as auricular cartilage or costal cartilage) and foreign prosthetic materials can be used as implant materials.^[4]

The complications of medialization laryngoplasty (type 1 thyroplasty) can be summarized as the implant material's dislocation towards the neck or into the larynx, chondritis of thyroid cartilage, allergic reaction against the used material, postoperative hematoma and edema, obstruction of the airway and inability to achieve satisfactory voice quality.^[5]

CASE REPORT

A forty-two-year-old female patient consulted our clinic complaining from ongoing cough for three months, voice disorder and dyspnea. It was understood that before the recent story, there had been a left vocal cord paralysis after a mediastinal excision and left pneumectomy done because of a timoma 11-years ago, and this was followed a-year later by a type 1 thyroplasty (silastic implant) aimed at left vocal cord medialization. The patient emphasized that she had not experienced any problems with her voice after the thyroplasty for 10-years, only to start to feel hoarseness and difficulty in breathing after acute cough episodes continuing for the last three months following an upper airway infection. There was no story of intubation or laryngeal trauma.

In the laryngeal endoscopic examination of the patient, a white colored irregularity on the anterior left vocal cord and left band ventricle fullness have been seen (Fig. 1). According to the patient's story, it was thought that this might be

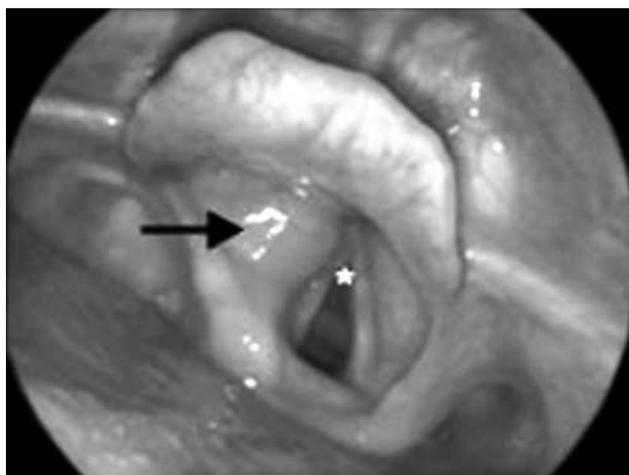


Fig. 1. Laryngeal endoscopic image fullness on the left ventricle (black arrow), and silastic prosthesis on the anterior of the left vocal cord (*).

the silastic prosthesis block implanted during the type 1 thyroplasty operation. Hereupon, a direct laryngoscopy under general anesthesia has been planned for the patient to be sure about the pathology. In the direct laryngoscopic examination under the microscope, the prosthesis's tapered part was observed nearly 2 mm protrusive through the mucosa of the Morgagni sinus, which is between the band ventricle and the vocal cord, up to the $\frac{1}{3}$ of the front side of vocal cord (Fig. 2). This situation brought forth the idea that the prosthesis may have moved towards the superior part. The silastic prosthesis was taken off by a microsurgery forceps through the endolaryngeal way (Fig. 3a, b). There were no complications during the surgery. The anesthetist was warned about avoiding strain during the recovery from general anesthesia because of the risk of prosthesis dislocation, subcutaneous emphysema and dyspnea. Patient awakened without any complications. During the one-month follow-up period of the patient, the complaint of hoarseness was nearly fully improved and there were no other complaints.

DISCUSSION

The complications that may arise after the medialization laryngoplasty are divided into two groups as major and minor complications. Hemorrhagia on the wound area, airway obstruction and dislocation of the prosthesis are major complications whereas vocal cord hematoma and dislocation of the prosthesis without airway obstruction are minor ones.^[5,6]

The complication ratio in type 1 medialization laryngoplasty cases is about 8%. In the occasions that an arytenoid adduction is added to the surgery, this ratio may be higher.^[5,7]

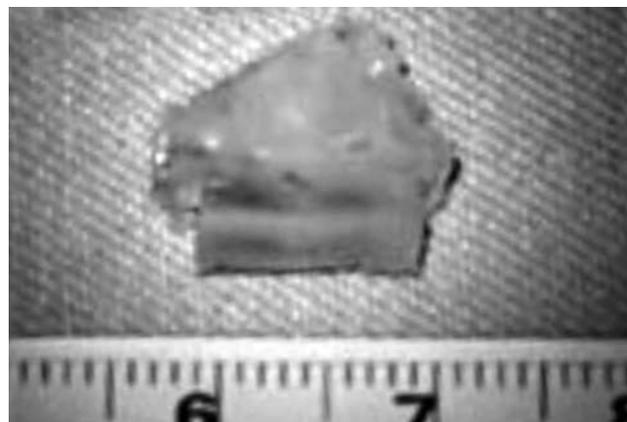


Fig. 2. Silastic prosthesis block.

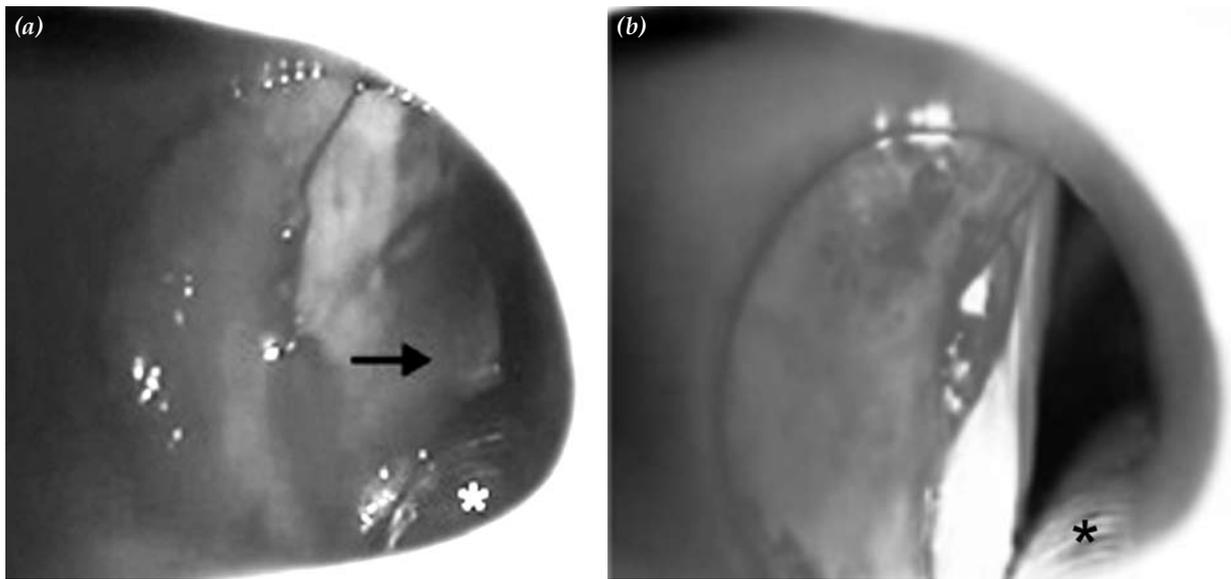


Fig. 3. (a) Extraction of the silastic prosthesis by endolaryngeal way. Silastic prosthesis (black arrow), intubation tube (*). (b) Laryngeal structures, endolaryngeal view after extraction, intubation tube (*).

In the studies performed, it is seen that the prosthesis dislocation ratio is between 0-10% and that these ratios are similar in the patient groups where different graft materials are used.^[8-11] From the literature, it is understood that the arytenoid adduction added to the surgical procedure does not change the prosthesis dislocation ratio.^[9]

Dislocation of the prosthesis is usually an earlier term complication. This complication might occur because of a laryngeal trauma, lack of prosthesis stabilization (based on the surgical technique) or earlier term insufficiency of tissue implant integration.^[12]

Late and spontaneous dislocation of the prosthesis without a laryngeal intervention is a very rare situation. It is mentioned to be observed in a 64-year-old female patient in the postoperative 5th year in the literature.^[7] In our patient, the point that drew the attention was the 10-year term. Dislocation of the prosthesis is more frequently observed in female patients. Small, thin and weak laryngeal structure and therefore proneness to traumas were shown as the reasons for this.^[6,8]

Laryngeal intubations in the postoperative period might cause a dislocation of the prosthesis. In our patient, there was neither the history of intubation, nor an external laryngeal trauma. It is reported that the prosthesis displacement is less likely if intubation is done by an experienced anes-

thetist and a laryngeal mask and jet ventilation are used.^[12]

Checking over our patient's story, the coughing problem because of the upper airway infection followed by the dyspnea and hoarseness in the following days was noteworthy, but there was no reflux in her anamnesis. The intralaryngeal tissue was maintained while locating the prosthesis in the intraoperative period. The patient had no complaints of dyspnea or disturbance in voice quality during the nine-years postoperative period, and there was no sign of dislocation of the silastic prosthesis in the periodic endoscopic laryngeal views. This made us think that the dislocation of the prosthesis may be caused by the forceful cough.

Dislocation of the prosthesis may cause disorders in voice quality and sudden airway obstruction. Urgent intubation and bronchoscopy may be needed if the implant becomes protrusive on the vocal cord level or closes the main bronchi. Under the circumstances in which the airway obstruction is not in a further stage a laryngoscopic examination must absolutely be done at first to see the implant's position and the level of airway obstruction and to choose between the endolaryngeal or extralaryngeal approaches. Afterwards, under elective conditions, the approach must be planned in order to cause the least damage to the laryngeal structure.

If the position of the prosthesis cannot be evaluated through endoscopic techniques, magnetic

resonance and computed tomography may also be used.^[13,14]

Although medialization thyroplasty is known as a secure technique, prosthesis dislocation cases and sudden airway obstructions must be considered. Therefore, patients must be informed about the operation and its risks.

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