

Use of Botox for the Treatment of Sialorrhea (Evaluated by Ultra Sound)

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1. Introduction

The normal salivary secretion which is about 1.5 - 2 Liters daily which comes from the major salivary glands (parotid, submandibular and lingual glands) which give about 95% of saliva while minor salivary gland (in the palate, buccal mucosa, floor of the mouth and lips) which give about 5% of saliva. Sialorrhea or excessive salivation is an uncommon condition, many factors have been implicated in this condition :

- 1) There is group of patients who report complaints of drooling, however, no obvious clinical evidence of excessive saliva production is observed. peronality analysis has suggested that the complaint of sialorrhea may be associated with high levels of neuroticism and tendency to dissimulate.
- 2) Some drugs like antipsychotic agents especially clozapine and cholinergic agonists used to treat dementia of Alzheimer and myasthenia gravis.
- 3) Neurological disorders such as cerebral palsy, parkinson's disease or amyotrophic lateral sclerosis but in these disorders, the drooling not caused by over production of saliva but by poor neuro muscular control.

Aim of this study:

To evaluate the efficiency of Botox for the treatment of this condition and used in the submandibular salivary gland (because it give about 70% of saliva)

2. Results

All the eight patients have reduction of saliva in about 30%, without any complication in the area of vascularity (facial artery and vein) in the submandibular salivary gland because we use fine needle(25 gauge) of dental syringe in the area.

Also, there is no dryness in the mouth because we give 10 cc of botox in each submandibular salivary glands. Post injection, assessments were repeated at regular times for up to one year.

3. Discussion

Treatment of sialorrhea became controversial between oral and maxillo facial surgeons, but using less invasive procedure like injection of botox in the submandibular salivary glands are effective methods for the treatment of this condition, rather than using invasive procedure (surgical) by using either removal of the submandibular salivary glands or relocation of the duct of parotid salivary gland in the tonsillar area.

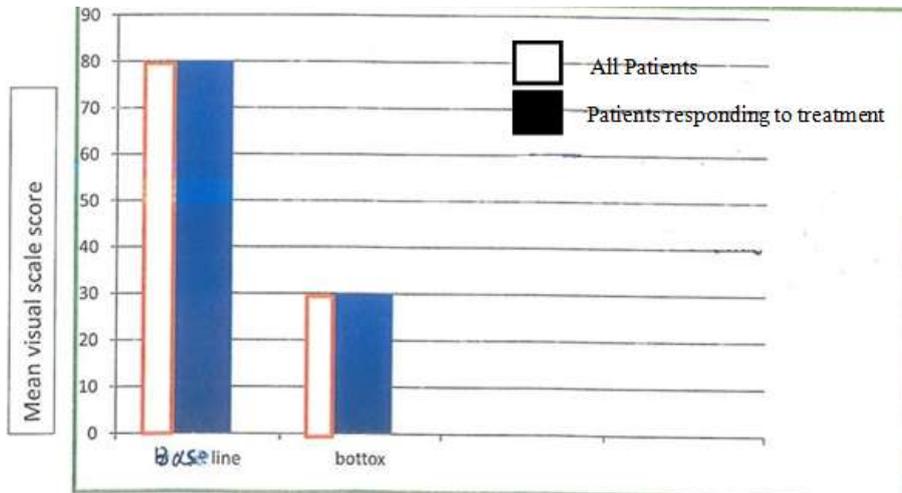
Using the ultrasound will give good guide for the treatment of sialorrhea when we use dental syringe injection in the area, some surgeons used to give injection in the submandibular and parotid salivary gland, but this method lead to dryness of the mouth, so we give 10 cc of botox in each submandibular salivary glands is enough to decrease salivation about 30% without any complication of dryness in the mouth.

4. Patients and methods

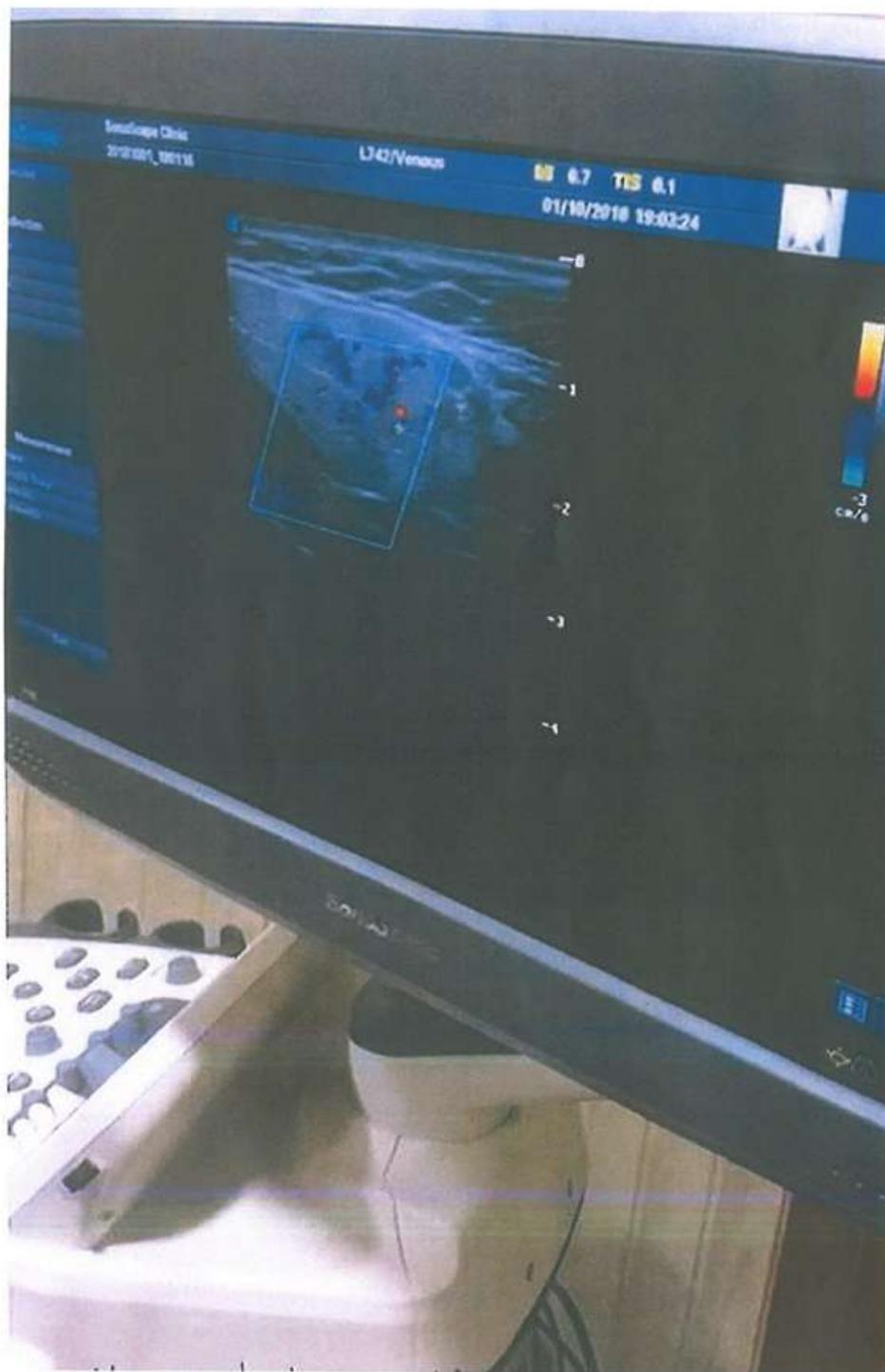
Eight patients here been evaluated clinically in the Palestine Medical Center, five are females and three males, who have excessive salivation for more than one year ago, they did not respond well to anticholinergic drugs, transdermal scopolamine has been used with some success.

All the patients have been assessed for general and neurological examination, ECG and routine laboratory tests, before the operation.

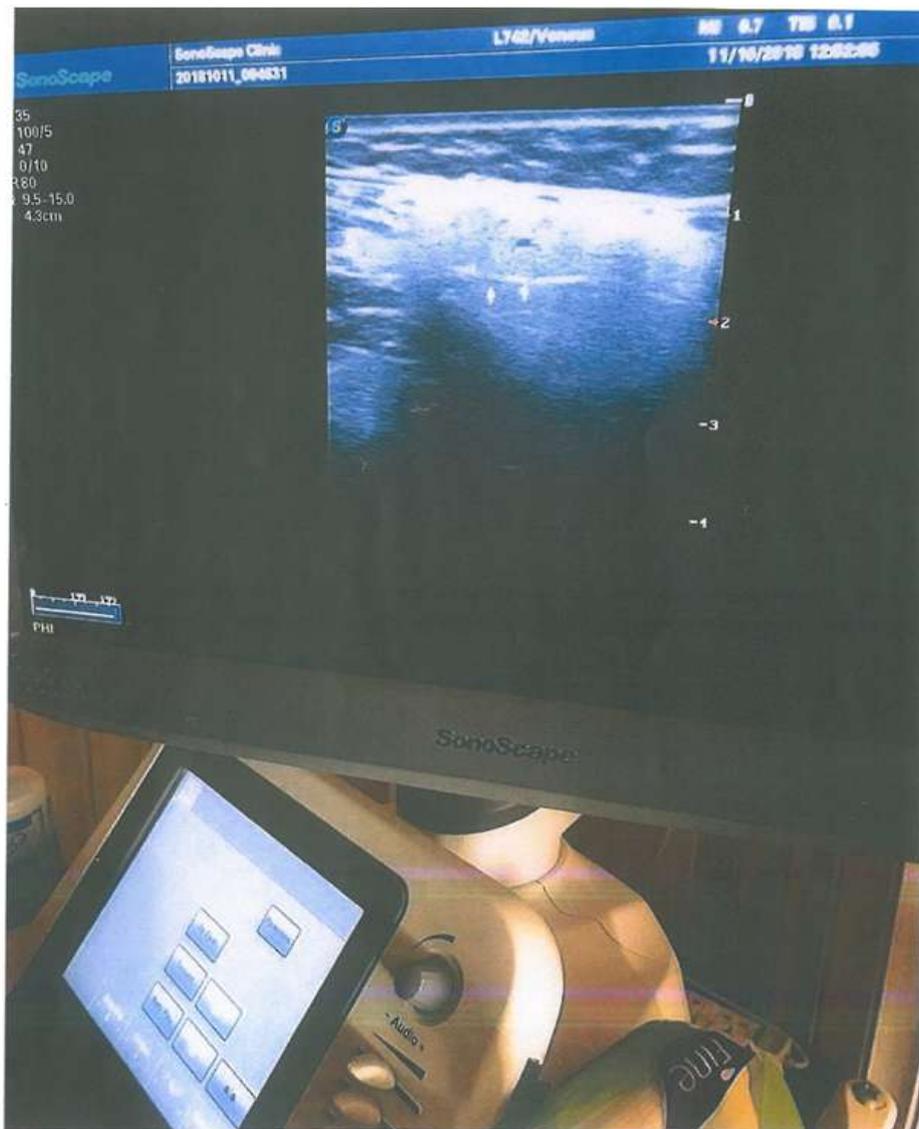
We use 10 units (ten unit) of botox, we aspirate it by using syringe (for insulin) to aspirate the botox, then put 10 unit in the dental syringe (carpule of dental syringe) because the needle is very fine (25 gauge), then injected by the guidance of ultra sound into the submandibular glands (right and left), using a linear electronic probe of 7.5 MHZ. After injection of botox, visual analogue scale score were done for the eight patients, which show improve meant in the mean rate of saliva secretion (decrease 30% of saliva).



10 cc of bottox in dental syringe



Ultra sound to show vascularity



This arrow to show dental needle in the submandibular salivry gland

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