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### ABSTRACT

**Purpose:** Web neck is a congenital anomaly characterized by a fibrotic band giving the neck a web-like appearance. It is unsightly and oftentimes, makes the patient to be emotionally and socially withdrawn. The aim of this work is to show that M to T rearrangement technique is an effective method for correcting webbed neck which in turn gives excellent functional and aesthetic results.

**Materials and Methods:** This is a case report of a patient with web neck corrected using the M to T plasty.

**Findings:** The webbed neck was completely corrected using the M to T flaps and patient had highest level of satisfaction on the Likert scale. The M to T rearrangement technique is an effective method for correcting webbed neck. It is an easily understood method which can be use by young surgeons.

**Implications to Theory, Practice and Policy:** This method should be used more often in correcting web neck.

**Key words:** Webbed, Neck, Congenital, Flaps, Plasty

## INTRODUCTION

Webbed neck is a congenital condition characterized by a broad ectopic fibrotic fascial band that lies superficial to the trapezius muscle giving the neck a web appearance<sup>1</sup>. Often the band runs from the mastoid process down to the acromion<sup>2</sup>. This condition was first described by Kobylinski in 1883<sup>1</sup>. Webbed neck is known also as Pterygium colli, a term coined by Funke in 1902<sup>3</sup>. Webbed neck is often associated with low posterior hairline making surgical correction a challenge<sup>1,4</sup>. This condition rarely cause functional impairment; however, it poses a great aesthetic and psychological challenge to the patient resulting in their withdrawal from social interactions with their peers<sup>4</sup>. Prompt correction of this deformity contributes to social acceptance of the affected individuals<sup>5</sup>.

Webbed neck can occur as an isolated condition or is associated with syndromes such as; Turner syndrome, Noonan syndrome, cardiofaciocutaneous syndrome, Klippel-Feil syndrome, four x syndrome, pseudoxanthoma elasticum etc<sup>1,2,6,7,8</sup>. 15% of patients with Turner's syndrome are affected<sup>4</sup>. This is thought to be as a result of abnormality in lymphatic development<sup>4</sup>. Noonan syndrome is associated with pulmonary valve stenosis, short stature, mild mental retardation, skeletal abnormality and occasionally webbed neck<sup>1,7</sup>. Detailed examination of the affected individuals often excludes associated syndromes<sup>8</sup>.

## Case Report

A 31-year-old female who presented with history of webbed neck which she became aware of from childhood. The web was not progressive and not associated with functional impairments. However, she gave history of severe psychological trauma and withdrawal from social interactions as she was commonly called “snake neck” (cobra neck). There is no family history of similar condition, had good academic records in school and has regular menstrual periods. Her examination revealed bilateral webbed neck with a fibrous band that runs from the mastoid process down to the acromion with low posterior hair line, no evidence of impaired cervical movements. Examination of the other systems revealed no associated abnormalities.

The diagnosis was explained to her and she was counseled on the surgical method to be used in the correction of the webbed neck. Informed consent was obtained and clinical photographs taken.

## Research Question

Can M to T plasty give good correction of Webbed neck?

## Method

Patient had general anesthesia with cuffed endotracheal intubation. She was positioned in the semi-lateral position. Cleaning and draping were done surgically, the fibrous band was palpated and marked. A pinch test was done at the midpoint of the band to determine the extent of the available surrounding tissue. A T shaped marking was made with the vertical limb along the fibrous band and the horizontal limb extending from the midpoint of the band. The vertical limb was 80mm and the horizontal limb about 40mm. An M marking (limbs measuring 40mm each) was made with the tip of the triangular flap of the M ending on the midpoint of the vertical T limb. The limbs of the M ended on the edges of the vertical T limbs. Triangular area of tissue bordering the limbs of the M marking and the triangular flap were excised. The flaps were

developed with blunt dissection, hemostasis was achieved by use of hemostats and diathermy. The fibrous band was identified and excised.

The triangular flap from the M marking was advanced into the horizontal limb of the T marking, while the developed flaps from the T markings were rotated into the area of excised tissue thus reconstructing the low posterior hair line. The flaps were secured on the bed of the wound with absorbable vicryl 3-0 sutures while the skin edges were apposed with nylon 3-0. A passive drain was inserted which was removed on the first day post-operation. The wound was dressed in layers using non-adherent, absorbent and a restraining layer of dressing. Patient was nursed 45 degrees head-up, analgesia was ensured.

## **FINDINGS**

The examination showed marked improvement in the aesthetic look of the patient. The patient also showed great satisfaction with the surgical outcome. Patient scored the outcome as very satisfied on Likert Scale.

## **Discussion**

Various surgical techniques have been described for correcting this condition, each with its merits and demerits<sup>1,2,8</sup>. The approach may be lateral or posterior<sup>9,10</sup>.

### **Posterior Approach**

1. Posterior cervical lift
2. Butterfly shaped correction
3. Use of tissue expansion

### **Lateral Approach**

1. Z- plasty
2. Modified Z-plasty
3. Lateral cervical advancement flap
4. M to T rearrangement

The posterior approaches are often associated with hypertrophic scar which may be a source of concern to the patient and has high rates of recurrence<sup>9</sup>. In the lateral approaches, there is risk of transposition of the hair bearing skin onto the non-hair bearing portion of the neck (anteriorly), however the work done by Benoit et al using the posterior cervical lift gave good result in their case series with no evidence of recurrence<sup>10</sup>.

In 2008, Katie et al reported the use of modify Z-plasty in reconstruction of webbed neck in Turner syndrome<sup>2</sup>. However, this method is associated with dog ear deformity which had to be corrected with multiple Z-plasties<sup>2</sup>. Antoszewski corrected webbed neck with Z-plasty, this resulted in mild recurrence of one of his subjects<sup>4</sup>.

In our index patient, the M to T rearrangement was used because it gives good functional and aesthetic outcome. This method is also easily understood by the young surgeon. This method was first reported by Murthy et al with excellent result and considerable advantage over the previously reported techniques<sup>1</sup>. In this method, the fibrous band was excised, removing the

possibility of recurrence. The rotation of tissues from the anterior neck helped reconstruct the hair line.<sup>1</sup>

When compared to other methods, the method used in this report not only corrected the webbed neck but also reconstructed the low posterior hairline.

### **Conclusion**

The M to T rearrangement technique is an effective method for correcting webbed neck. It gives both functional and cosmetically excellent results. It is an easily understood method which can be used by young surgeons.

### **Conflict of interest**

No conflict of interest

## References

1. Ananth SM, Margeaux M. M to T Rearrangement: An Approach to Correct Webbed Neck Deformity. Case Reports in Medicine. 2014;
2. Funke F. Pterygium Colli. Deutsche Zeitschrift Fur Chirurgie .1902; 63(2): 162-167
3. Katie RH, George JB, Milton TE, Raymond FM. Modified Z-plasty Repair of Webbed Neck Deformity Seen in Turner and Klippel-Feil Syndrome. The Cleft Palate-Craniofacial Journal. May 2002;39(2).262-266.
4. Zielinski T, Lorenc-Podgorska K, Antoszewski B. Pol Przegl Chir. 2015 Mar;87(3):134-8.
5. McCauly, Fenillan P, Kushner H. Psychological Development in Adolescents with Turner's Syndrome. J Dev Behav Pediatr 2001; 22:360-65
6. Bekkar MN, van den Akker NM, de Mooij YM. Jugular Lymphatic Maldevelopment in Turner Syndrome and Trisomy 21: Different Anomalies Leading to Nuchal edema. Reprod Sci:2008; 15:295-304
7. Chandler FA. "Webbed Neck (pterygium colli)". American Journal of Children. 1937; 39:798-803.
8. Rhishikesh T, Srinivas M. Atlas and Synopsis of Neonatology. First Edition. Panama City Jaypee Brothers Medical Publishers; 2016
9. Cnnel J, Anthony J, Defranzo. Butterfly Correction of Webbed Neck Deformity in Turner Syndrome. Plastic and Reconstructive Surgery July 1980;66(1):129-133.
10. Benolt C, Jean P, Raphael L, Thomas M, Flories N, Christian H et al. Plastic Reconstr Surg Glob Open; 2013(1): e46

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