



Technical Note

# Oblique chondrotomy alone for repair of neglected cleft sternum in adulthood

Mohamed A.K. Salama Ayyad<sup>1</sup>, Hussein Elkhayat\*

Cardiothoracic Surgery Department, Faculty of Medicine, Assiut University, Assiut, Egypt

Available online 16 June 2016

## Abstract

**Objectives:** Cleft sternum is an infrequent anomaly which typically draws parents' attention since birth with subsequent surgical repair in early years of life but few cases ask for surgical consultation at adulthood. We report 3 cases during the last 10 years in whom we use only a release oblique osteochondrotomy incision to primary repair the cleft without the need for a prosthetic material or bone graft.

**Methods:** A retrospective descriptive study for three cases of congenital complete cleft sternum surgically repaired between 2004 and 2014 at cardiothoracic surgery department, Assiut University, Egypt. Surgery was done through a vertical midline incision, removal of the redundant skin, and the sternal edges were defined. Pectoralis muscle flap were created on both sides. A sliding cartilage flap was created between the second and fourth costal cartilages, and the sternal bars from both sides were advanced to meet in the midline followed by sternal approximation with stainless steel sutures of appropriate size.

**Results:** Mean ages of cases we have operated were 17.6 years  $\pm$  SD 1.52. All patients recovered smoothly, extubation was done in the operating room and with no need for postoperative mechanical ventilation. Chest wall movement was stable completely. Patients were discharged between 4th – 6th days postoperatively according to pain tolerance. Cosmetic results were acceptable for all patients. Chronic pain/neuralgia were not reported in 2 years follow up period.

**Conclusions:** We propose a simple surgical technique for repair of cleft sternum in adulthood without the need for prosthetic material or bone grafts. In comparison with previous techniques, it offers the theoretical advantage of restoring the anatomy without the risk of infection of the prosthesis or hazards of bone graft.

Copyright © 2016, The Egyptian Society of Cardio-thoracic Surgery. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

**Keywords:** Chest wall; Cleft sternum; Congenital anomalies; Surgery

\* Corresponding author. Cardiothoracic Surgery Department, Assiut University Hospitals, Assiut, Post Code 71526, Egypt. Tel.: +20 1005549653; fax: +20 882333327.

E-mail addresses: [ayyadclinic@gmail.com](mailto:ayyadclinic@gmail.com) (M.A.K.S. Ayyad), [dr\\_khayat@hotmail.com](mailto:dr_khayat@hotmail.com) (H. Elkhayat).

Peer review under responsibility of The Egyptian Society of Cardio-thoracic Surgery.

<sup>1</sup> Cardiothoracic Surgery Department, Assiut University Hospitals, Assiut, Post Code 71526, Egypt. Tel.: +20 1002001932.

## 1. Introduction

The sternum develops from mesenchymal cells [1]. A defect in the fusion process causes the sternal cleft (SC) which is a rare idiopathic congenital chest wall malformation (CWM). Acastello et al. found that SC accounted for 0.15% of all CWMs [2]. The Hoxb gene might be involved in the development of SC [2].

SC is classified into two major forms, complete and partial, which can be superior or inferior.

SC causes paradoxical respiratory movements and upturns the hazard of injurious events on mediastinal viscera. Surgical correction is therefore recommended, if possible in the neonatal age, to achieve primary closure. However, some cases reported to present in the adulthood. Most of the difficulty in closing these clefts in adults is due to the rigidity of the chest wall [3].

Various surgical techniques for repair of cleft sternum have been described. Primary approximation, sliding or rotating chondrotomies, and reconstruction of the defects with the use of prosthetic grafts or flaps of bone, cartilage, autogenous tissue, or pectoralis major muscle are the main techniques [4–6]. However in cases which presented late in adulthood options for repair are limited to use of bone grafts in most case series [3].

In this study we report 3 cases during the last 10 years in whom we use only a release oblique osteochondrotomy incision to primary repair the cleft without the need for a prosthetic material or bone graft.

## 2. Patients and methods

A retrospective descriptive study for three cases of congenital complete cleft sternum surgically repaired between 2004 and 2014 at cardiothoracic surgery department, Assiut University, Egypt.

A detailed echocardiography was organized to rule out intra-cardiac defects. Imaging consisted of multislice CT scan chest for the last case and conventional CT scan chest to the 1st two cases (Fig. 1). This confirmed the presence of a sternal cleft.

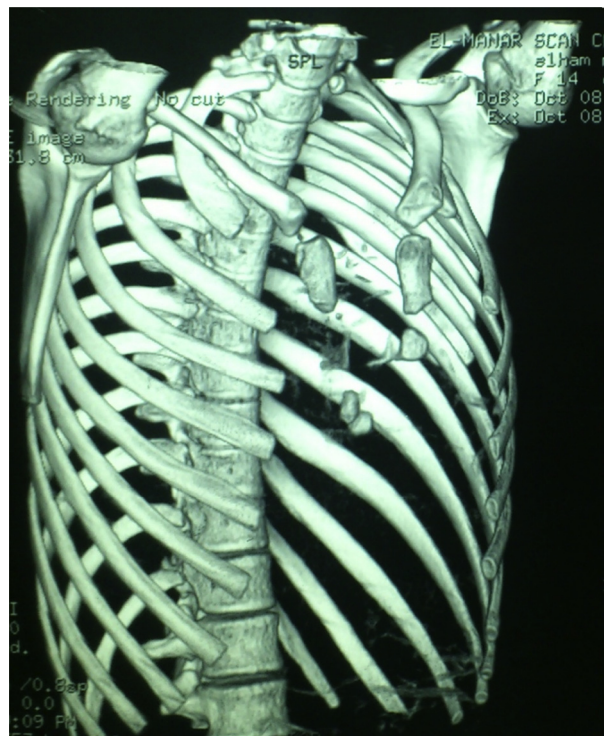


Fig. 1. Reconstruction image of CT scan chest of a patient demonstrate complete sternal cleft.

Download English Version:

<https://daneshyari.com/en/article/2967286>

Download Persian Version:

<https://daneshyari.com/article/2967286>

[Daneshyari.com](https://daneshyari.com)