

## Letter to the Editor

# Skin reaction after pectus surgery

 Huseyin Yildiran\*

Department of Thoracic Surgery, Selcuk University Medical School, Konya, Turkey.

### Dear Editor,

I have read the article entitled “Minimally invasive pectus excavatum surgery: Nuss procedure” by Apaydın T and Akkuş M published in *Current Thoracic Surgery* (2021; 6(2): 69-74) with a great interest [1]. I want to congratulate the authors for this successful article, and make some contributions.

One of the most common complications in patients who have undergone the Nuss procedure is skin reactions defined as bar allergy and consequent bar exposures, as stated by the authors. The problem encountered on the skin often occurs in the surround of the bar ends and progresses as a dermatitis with non-itching erythema. If appropriate follow-up and treatment is not performed, it can progress to open wound formation and bar exposure. However, the point to be emphasized here is that this skin reaction is not entirely the result of metal bar allergy. Although bars containing metals such as nickel and chromium, which may cause allergic reactions, are used in surgery, it should be kept in mind that the contact of the metal bar with the skin and skin tension may also cause skin reaction. Although it has been

reported in the literature that metal allergy is 10% in the general population, the complication rate defined as bar allergy in pectus excavatum series has been reported to be between 0.5% and 6.4% [2]. While this rate was 5% in the authors’ study, it was 3.1% for pectus excavatum and 8% for pectus carinatum according to our experience [1, 3]. Compared to the normal population, metal allergy is less common in pectus patients. In the literature, it was found that nickel, molybdenum, manganese release did not change in patients with bar, chromium and iron release increased, and it was reported that there was no difference in metal release in patient groups using single bar and more than one bar [4]. It has also been shown that preoperative allergy testing on the skin is not an appropriate method to screen for the risk of post-operative reactions [5]. In fact, there is no consensus on whether this complication is due to allergy, metal release, or surgical technique. It would be more appropriate to use the terminology of “skin reaction” or “metal reaction” instead of “bar allergy” or “metal allergy” in the definition of that complication. The reasons for this reaction may be metal release, as well as direct contact of the bar ends with the dermis, pressure, and tension

---

Corresponding Author\*: Hüseyin Yıldiran, MD. Department of Thoracic Surgery Medical School, Selcuk University, Alaeddin Keykubat Kampus, Selçuklu, Konya, Turkey.

E-mail: h-yildiran@hotmail.com Phone: +90 5412590238

Doi: 10.26663/cts.2021.0017

Received 08.08.2021 accepted 12.08.2021

Provenance and peer review: This article was commissioned by the Editorial Office, *Current Thoracic Surgery*. The article did not undergo external peer review.

on the skin. Therefore, after the bar is implanted, the complication rate can be reduced by preparing a muscle flap to cover the bar ends and bending the bar ends to fit the thoracic arch.

**Keywords:** complication, pectus excavatum, skin reaction.

### Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

### Funding

The authors received no financial support.

### References

1. Apaydin T, Akkuş M. Minimally invasive pectus excavatum surgery: Nuss procedure. *Curr Thorac Surg* 2021; 6: 69-74.
2. Gałązka P, Leis K, KroczeK K, Baska A, Kazik J, Czajkowski R. Metal allergy after the Nuss procedure for pectus excavatum: a review. *Postepy Dermatol Alergol* 2020; 37: 848-52.
3. Yildiran H, Sunam GS. Preventing Bar-related complications for chest wall deformities. *J Contemp Med* 2021; 11: 380-5.
4. Torre M, Genova Gaia L, Calevo MG, Wong M, Raso M, Barco S et al. Blood metal levels after minimally invasive repair of pectus excavatum. *Interact Cardiovasc Thorac Surg* 2021; 33: 76-81.
5. Aneja S, Taylor JS, Soldes O, DiFiore J. Dermatitis in patients undergoing the Nuss procedure for correction of pectus excavatum. *Contact Dermatitis* 2011; 65: 317-21.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).