Correction of Congenital Symmastia with Macromastia: Report of a Rare Case and Devised Treatment Algorithm

Kyu Nam Kim¹, Won Ha², Chi Sun Yoon², Hoon Kim¹

¹Department of Plastic and Reconstructive Surgery, Konyang University Hospital, University of Konyang College of Medicine, Myunggok Medical Research Center, Daejeon 35365, Korea
²Department of Plastic and Reconstructive Surgery, Ulsan University Hospital, University of Ulsan College of Medicine, Ulsan 44033, Korea

Kyu Nam Kim and Won Ha contributed equally to this work.

Key words: Congenital; Lipectomy; Mammaplasty; Symmastia

Introduction
Symmastia is defined as the medial confluence of both breasts or unification of the breasts by soft tissue on the sternum rendering them inseparable. It was first described in the plastic surgery literature by Spence et al. in 1984.[1‑3] Two forms of symmastia exist; acquired and congenital.[1‑3] Acquired symmastia is a very common condition that results as an iatrogenic complication of over-dissecting a pocket, or using implants with a diameter that is too large in proportion to the chest wall during breast augmentation or reconstruction.[2,3] Whereas, congenital symmastia is an extremely rare condition caused by a developmentally aberrant proliferation of mammary tissue, resulting in an intermammary web crossing the sternal midline.[2,3] This web-like soft tissue is composed of glandular tissue, subcutaneous fat, and fibrous septa in different proportions, which traverses the sternum to connect both breasts medially.[1,2,4,5] Only a few case reports of congenital symmastia have been previously reported, and the knowledge of its pathophysiology, exact incidence, and ideal treatment is still insufficient.[2,3] Herein, we present a case of congenital symmastia with macromastia corrected with liposuction and reduction mammaplasty with good esthetic results. To the best of our knowledge, there has been only one case reported in Asia,[5] and the current case report is rare in Korea.

Case Report
We obtained written informed consent from the patient, and the local Institutional Review Board approved the use of the patient’s data for this report.

A 36-year-old Korean woman with congenital symmastia and macromastia visited our hospital for corrective surgery. She had insignificant medical and family histories; she had no history of augmentation mammaplasty with breast implant. Physical examination revealed large volume, conjoint breasts showing Grade I breast ptosis (according to Regnault’s classification), without an intervening intermammary sulcus [Figure 1a and 1b]. Ultrasonography and mammography performed in an independent clinic showed that the tissue connecting the breasts medially is mainly fatty. Vertical reduction mammaplasty with superomedial pedicle and liposuction over the intermammary web was planned [Figure 1c]. For symmastia correction, the lower web-like soft tissue was removed from the overlying presternal skin and subdermal sutures were applied along the inframammary fold with 3-0 polydioxanone sutures on each side through reduction mammaplasty. The upper web was approached through liposuction, and 190 ml lipoaspirate was obtained. The weight of the breast tissue removed by reduction mammaplasty was 426 and 402 g for the right and left breasts, respectively. Subsequently, a personalized “X-shaped” supporting garment was accoutred for 3 months to stimulate adherence of the presternal skin to the sternum.
No postoperative complications, such as hematoma, seroma, infection, or dehiscence were reported. After a 6-month follow-up, an esthetically successful appearance of the intermammary sulcus was maintained with the symmetry of both breasts [Figure 1e and 1f]. In addition, the patient was satisfied with the esthetic outcome, both in terms of improvement of the symmastia, and the reduced breast sizes.

**Discussion**

Treatment of congenital symmastia is a challenging prospect for plastic surgeons due to its rare prevalence and reporting. Initial studies reported favorable outcomes using Y-V plasty, yet with an inevitably visible scar in the intermammary space.[1] Since then, surgeons have attempted to find a way to avoid scarring in the presternal area,[2] particularly in Asian patients, given their predisposition to keloid formation with any incision in the sternal area.[3] Surgical removal of the intermammary web-like tissue aims at a better cosmetic outcome through the avoidance of sternal incisions.[3] Therefore, small or remote incisions made in an inconspicuous region with access to the inner quadrants of the breast and presternal area are preferred.[3]

In cases of congenital symmastia with macromastia, reduction mammoplasty is a very useful surgical method because it reduces the breast volume and simultaneously removes the lower web-like tissue with ease. During reduction mammoplasty, reattaching the skin envelope to the sternum to re-establish the medial border of the breast can be done with several subdermal sutures.[2] Reduction mammoplasty provides the surgeon with options to mold all the three dimensions of the breast as required per the individual, and provides a good overview of the presternal area, allowing the surgeon to treat congenital symmastia without leaving visible scars on the sternum.[2]

Liposuction should be considered a necessary procedure for congenital symmastia with or without macromastia. For congenital symmastia with macromastia, concurrent liposuction is more useful than reduction mammoplasty because direct excision of the upper web-like tissue might be insufficient, and because it minimizes injury to the internal mammary vessels. In the case of congenital symmastia without macromastia, liposuction over the sternal area is the treatment of choice. Liposuction is also more effective when the underlying intermammary tissue is primarily fatty with less fibrous septa, as in our case.

However, when the intermammary tissue consists of fibrous septa and glandular tissue rather than fat, excision of the tissue and subdermal suturing through small inframammary incision should be performed to avoid unsightly scars.[2,3] Midline vertical skin incisions over the sternum with lateral extension into the inframammary folds and various local flaps for repair should be avoided. Aggressive subdermal or transdermal sutures are also not recommended because these procedures have a high risk of keloid scarring in the cleavage.[3]

For all cases of congenital symmastia, a personalized “X-shaped” support garment should be accoutred immediately after surgery for at least 3 months to stimulate adherence of the presternal skin to the sternum.[3]

To achieve complete correction of congenital symmastia, it is mandatory to remove the medial web-like soft tissue and to recreate the normal medial border of the breast. Reduction mammoplasty is useful in removing the lower web-like tissue directly, and liposuction can be used mainly to eliminate the upper web-like tissue. With reduction mammoplasty and liposuction, we successfully corrected congenital symmastia with macromastia. Furthermore, we suggested a simple algorithm for the treatment of congenital symmastia [Figure 1g].
Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

REFERENCES
1. Spence RJ, Feldman JJ, Ryan JJ. Symmastia: The problem of medial confluence of the breasts. Plast Reconstr Surg 1984;73:261-9. doi: 10.1097/00006534-198402000-00020.

2. Søllesøn NH, Hölmich LR, Siersø HE, Bonde C. Congenital symmastia revisited. J Plast Reconstr Aesthet Surg 2012;65:1607-13. doi: 10.1016/j.bjps.2012.08.008.

3. Karamese M, Hanci M, Abaci M, Akatekin A, Tosun Z. An easy way for congenital symmastia correction. Aesthetic Plast Surg 2014;38:369-72. doi: 10.1007/s00266-014-0282-x.

4. Piza-Katzer H, Engelhardt TO, Steiner HJ, Zelger B. Familial congenital symmastia: Ultrastructurally abnormal breast tissue. Scand J Plast Reconstr Surg Hand Surg 2009;43:339-42. doi: 10.1080/02844310802271063.

5. Wong MT, Cheong EC, Lim J, Lim TC. Creation of an intermammary sulcus in congenital symmastia. Singapore Med J 2007;48:e29-31.