

**Fig. 5.** Immunohistochemical study (Vimentin,  $\times 400$ ). The tumor cells were positive for the mesenchymal marker vimentin.

catenin is variable but specific [4].

Surgical treatment is the technique of choice. It is necessary to perform a wide resection in order to decrease the recurrence rates. There is no consensus in determining how wide the excision margins must be in the resection as it is difficult to differentiate tumor tissue from healthy tissue [2]. Some authors suggest making the margin at least 2–3 cm wide [1]. These tumors present a high rate of recurrence (between 15% and 77%) [2,3], particularly in cases where resection with wide margins is difficult, such as facial tumors. The use of postoperative radiotherapy is beneficial in the case of these tumors. The total recommended dose is 50–60 Gy [5]. Some published series show the usefulness of chemotherapeutic treatments in order to achieve a reduction in the tumor size. Some of these treatments are vincristine, methotrexate, doxorubicin, or imatinib [2]. Due to the fact that desmoid tumors have estrogen receptors, the possibility of associating hormonal therapy with tamoxifen for the treatment of these tumors has been raised [3].

In conclusion, the extra-abdominal desmoid tumor is a rare benign tumor that presents itself as an aggressive fibrosis of the musculoaponeurotic tissue. The treatment of choice is wide-margin surgical resection. In order to avoid recurrence, there are other forms of treatment, such as radiotherapy, chemotherapy, and hormonal therapy.

## References

1. Dafford K, Kim D, Nelson A, et al. Extraabdominal

desmoid tumors. *Neurosurg Focus* 2007;22:E21.

2. Molloy AP, Hutchinson B, O'Toole GC. Extra-abdominal desmoid tumours: a review of the literature. *Sarcoma* 2012;2012:578052.
3. Shinagare AB, Ramaiya NH, Jagannathan JP, et al. A to Z of desmoid tumors. *AJR Am J Roentgenol* 2011; 197:W1008-14.
4. Weiss SW, Goldblum JR. Fibromatoses. In: Weiss SW, Goldblum JR, editors. *Enzinger and Weiss's soft tissue tumors*. 5th ed. St. Louis: Mosby Elsevier; 2008. p.227-55.
5. Schulz-Ertner D, Zierhut D, Mende U, et al. The role of radiation therapy in the management of desmoid tumors. *Strahlenther Onkol* 2002;178:78-83.

## A Giant Subpectoral Lipoma

Jun Chul Shin<sup>1</sup>, Bum Sik Kang<sup>1</sup>, Woo Hoe Heo<sup>1</sup>, Keum Ha Choi<sup>2</sup>, Eun-A Kim<sup>3</sup>, Jeong Hoon Song<sup>1</sup>

Departments of <sup>1</sup>Plastic and Reconstructive Surgery and <sup>2</sup>Pathology, Wonkwang University School of Medicine, Iksan; <sup>3</sup>U&U Clinic, Iksan, Korea

**Correspondence:** Jeong Hoon Song  
Department of Plastic and Reconstructive Surgery, Wonkwang University School of Medicine, 895 Muwang-ro, Iksan 570-711, Korea  
Tel: +82-63-859-1582, Fax: +82-63-857-3704  
E-mail: plasticos@wku.ac.kr

This paper was supported by Wonkwang University Fund in 2013.

This article was presented as a poster at the 68th Congress of The Korean Society of Plastic and Reconstructive Surgeons on November 4–7, 2010 at Seoul, Korea.

No potential conflict of interest relevant to this article was reported.

Received: 2 Jul 2014 • Revised: 7 Aug 2014 • Accepted: 23 Aug 2014  
pISSN: 2234-6163 • eISSN: 2234-6171  
<http://dx.doi.org/10.5999/aps.2014.41.6.782> • Arch Plast Surg 2014;41:782-784

Copyright © 2014 The Korean Society of Plastic and Reconstructive Surgeons  
This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

A lipoma is a common benign tumor of mesenchymal origin that can arise in any location where fat is normally present, with incidence of approximately 16% of all mesenchymal tumors. However, submuscular lipomas under the pectoralis major muscle are rare. And, because lipomas tend to be small, large lipomas are specifically called 'giant lipoma.' Giant lipoma is defined as a lipoma that is greater than 10 cm in any direction or greater than 1,000 g in weight [1].

**Fig. 1.**

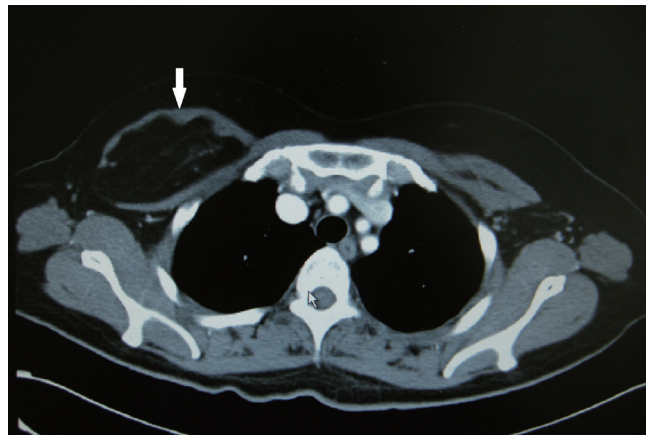
Preoperative appearance. Right upper outer quadrant of her breast was more prominent than left.

**Fig. 2.**

Preoperative appearance. When she contracted her pectoralis major muscle, more bulging of the mass was observed.

A 38-year-old female visited our department with a one-year history of a palpable mass in her upper outer quadrant of the right breast. She was otherwise well, and did not have other symptoms such as nipple discharge or skin changes. She did not complain any neurologic symptoms at all. She also denied past trauma and other specific medical history. Physical examination revealed that the right upper outer quadrant of her breast was more prominent than the left (Fig. 1). When she contracted her pectoralis major muscle, more bulging of the right upper breast was observed (Fig. 2). Chest computed tomography (CT) scan showed a huge mass beneath the right pectoralis major muscle, compatible with a lipoma (Fig. 3). The patient underwent complete surgical excision using a transaxillary approach under general anesthesia. We found a mass with thin capsule beneath the pectoralis major muscle. After submuscular dissection assisted by endoscope, a lipoma measuring 14 cm × 8 cm in size was removed, and the weight of the mass was 216 g (Fig. 4). The patient recovered uneventfully, and histologic analysis revealed mature adipocytes with delicate cellular membranes and small, indistinct nuclei without evidence of malignancy or lipoblasts, consistent with the diagnosis of a lipoma. After two months of follow up, the patient was very pleased with the results and we could restore the breast symmetry (Fig. 5).

Lipomas, one of the most frequently encountered benign mesenchymal tumors, are composed of mature fat tissue and commonly found in the superficial subcutaneous tissues of the extremities and trunk. Rarely, they can arise in the oral cavity, pharynx,

**Fig. 3.**

Preoperative chest computed tomography (CT) scan. Chest CT showed a huge mass with sharply defined margin and homogenous fat density beneath the right pectoralis major muscle (white arrow).

larynx, and parotid gland [2].

Lipomas are usually benign, well circumscribed, and covered by a thin capsule, appearing in almost every region of the body, with a prevalence of 2.1 per 1,000 people. They are typically encountered in patients between 50 and 70 years of age and are more common in the obese. Trauma can be a cause of lipomas; post-traumatic lipomas are a poorly recognized and investigated entity [3].

The breast is a common site for this pathology; however, the tumors tend to be small and asymptomatic. A review of the literature showed that a large number of lipomas are small, weighing only a few grams. Very large tumors are observed infrequently, but tumors weighing up to 200 g have occasionally

**Fig. 4.**

Dissecting under the muscle with assistance of endoscope, a lipoma measuring 14 cm × 8 cm in size was removed, and the weight of the mass was 216 g.

**Fig. 5.**

Photo at postoperative two months shows improved chest wall symmetry.

been reported. In cases of giant lipomas, a different diagnosis must be made with liposarcoma that is usually closely related to the size of the tumor. The main aim in diagnosis of giant lipomas should be to rule out malignancy.

A lipoma may occasionally be found within muscle or between muscles. However, by Pubmed search, we found only a few cases of subpectoral lipoma removed with surgery. And, reports of a giant lipoma beneath the pectoralis major muscle are very rare, only two cases of giant subpectoral lipoma have been reported [4,5].

Most lipomas are subcutaneous and require no imaging evaluation. When deep/large/unusual in location, these tumors can be identified and localized by CT or magnetic resonance imaging scan. Radiolucency and poor vascularization are characteristics of a lipoma on plain radiography. A lipoma appears as a sharply defined, homogenous fat density mass on CT scan. In our case, findings on CT scan led to radiological diagnosis of a submuscular lipoma under pectoralis major muscle, prior to the excision and histopathological confirmation of the diagnosis.

Treatment of lipomas is complete surgical excision. Incomplete excision may lead to recurrence.

In conclusion, we report a case of a giant subpectoral lipoma, which is very rarely presented. Using a transaxillary approach and endoscope, we were able to remove the entire lipoma beneath the pectoralis major muscle, and the patient recovered well and did not have recurrence for four years.

## References

1. Sanchez MR, Golomb FM, Moy JA, et al. Giant lipoma: case report and review of the literature. *J Am Acad Dermatol* 1993;28:266-8.
2. Som PM, Scherl MP, Rao VM, et al. Rare presentations of ordinary lipomas of the head and neck: a review. *AJNR Am J Neuroradiol* 1986;7:657-64.
3. Simango S, Ramdial PK, Madaree A. Subpectoral post-traumatic lipoma. *Br J Plast Surg* 2000;53:627-9.
4. Hakim E, Kolander Y, Meller Y, et al. Gigantic lipomas. *Plast Reconstr Surg* 1994;94:369-71.
5. Schotman M, van Duijnhoven FH. A man with a swollen right breast. *Ned Tijdschr Geneesk* 2013; 157:A6149.