



Bilateral symmetrical lipoma of the buccal fat pad as an incidental finding in a woman with weight gain after tamoxifen: a case report

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Although lipoma is a common benign tumor, it occurs relatively infrequently in the oral and maxillofacial areas, and only 31 cases of lipoma in the buccal fat pad have been reported. Herein, we present an extremely rare case of symmetric lipomas in both buccal fat pads. These masses were incidentally discovered during a facelift procedure in a 50-year-old woman with a 4-year history of tamoxifen use. during which she had gained 10 kg. The patient stated that cheek protrusion had developed concomitantly with weight gain and was exacerbated by an injection lipolysis procedure she had received 1 year previously. This case underscores the importance of paying careful attention to the patient's medication use and surgical history when evaluating suspected cases of lipoma, and sheds light on tamoxifen use and subcutaneous injections of phosphatidylcholine and deoxycholate as potential risk factors for lipoma development.

Abbreviations: DC, deoxycholate; PC, phosphatidylcholine

Keywords: Case reports / Face lift / Leptin / Lipoma / Tamoxifen / Weight gain

INTRODUCTION

Lipoma, which is the most common benign tumor of mesenchymal origin, can occur anywhere adipose tissue is present [1]. Common locations of lipoma are the shoulder, back of the neck, back, thigh, buttocks, and upper arm, while lipoma less frequently occurs on distal extremities and in the craniofacial area. In particular, only 1% to 4% of all lipomas occur in the oral and maxillofacial area [2]. Lipoma in the buccal fat pad is particularly rare and underreported, as only 31 cases have been reported [3].

We report a rare case of symmetrical lipomas in the buccal fat pads that were incidentally found during facelift surgery in a 50-year-old woman with breast cancer. She had been taking

tamoxifen, and reported that she had undergone injection lipolysis for both cheeks, which has not been effective.

CASE REPORT

A 50-year-old woman was admitted to the plastic surgery center for facial contour improvement; specifically, she hoped to address a square shape of the face that resulted from protruding cheeks. She was taking tamoxifen as an anti-hormonal treatment after having undergone total mastectomy for left breast cancer 4 years ago. She had gained 10 kg of weight after starting to take tamoxifen and reported no history of facial trauma. She stated that her cheeks began to protrude as she gained weight. In addition, she complained that her cheeks protruded even more after she underwent injection lipolysis, including 10 injections of phosphatidylcholine (PC) and deoxycholate (DC), at a plastic surgery clinic a year ago for adipose reduction in both cheeks. She visited our department for surgical treatment. We

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planned a facelift under general anesthesia to create an oval-shaped face, along with buccal fat reduction in both cheeks.

Subcutaneous facelift with plication of the superficial musculoaponeurotic system via a pretragal incision was performed. While performing buccal fat reduction after subcutaneous layer dissection, symmetrical masses composed of adipose tissue in both buccal fat pads were incidentally found and total excision was performed (Fig. 1). The operation was completed after performing a superficial musculoaponeurotic system plication suture and excising excess skin. The excised masses were sent for biopsy. The patient had no complications such as hematoma or infection after surgery.

The masses removed from both buccal fat pads were finally diagnosed as lipoma since they showed well-matured lipocytes with intermingled fibrovascular stroma surrounded by a fibrous capsule on a microscopic examination (Fig. 2) [4]. Photographs were taken before surgery, at 1 month, at 3 months, and at 6 months after surgery to evaluate the outcomes. The 6-month postoperative photographs showed an oval shape of the face, and the patient was satisfied with the improved con-

ours of both cheeks (Fig. 3).

DISCUSSION

Lipoma is the most common benign tumor of mesenchymal origin, and it can occur anywhere that adipose tissue is present [1,5]. Lipoma is frequently found in the upper and lower limbs, but is uncommon in the head and neck [6]. On clinical examination, lipomas are smooth, well-circumscribed, lobulated, and greasy to the touch, and they show a tendency for slow growth [7]. A definite diagnosis of lipoma is possible when a microscopic examination reveals adult adipocytes in the stroma of connective tissue surrounded by a fibrous capsule [5,8,9].

Burns first described lipoma in the buccal fat pad in 1811 [10], and Cameron published the first review article on lipoma in the buccal fat pad in 1921 [11]. Lipoma in the buccal fat pad is uncommon, as only 31 cases have been reported, and it is thought to be underreported due to its atypical characteristics [4]. Lipoma in both buccal fat pads is particularly rare, as only one other case has been reported [12].

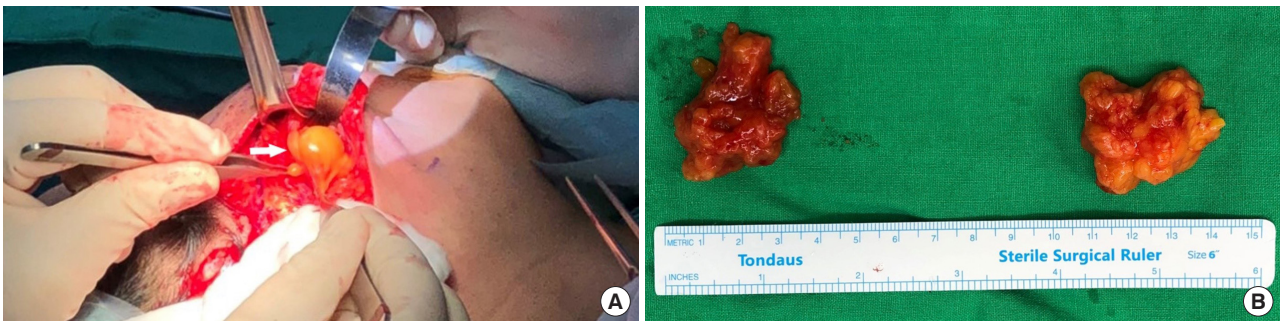


Fig. 1. Intraoperative photographs. (A) A 50-year-old woman with an encapsulated mass in the buccal fat pad composed of adipose tissue (white arrow). (B) Excision of bilateral symmetric masses composed of adipose tissue.

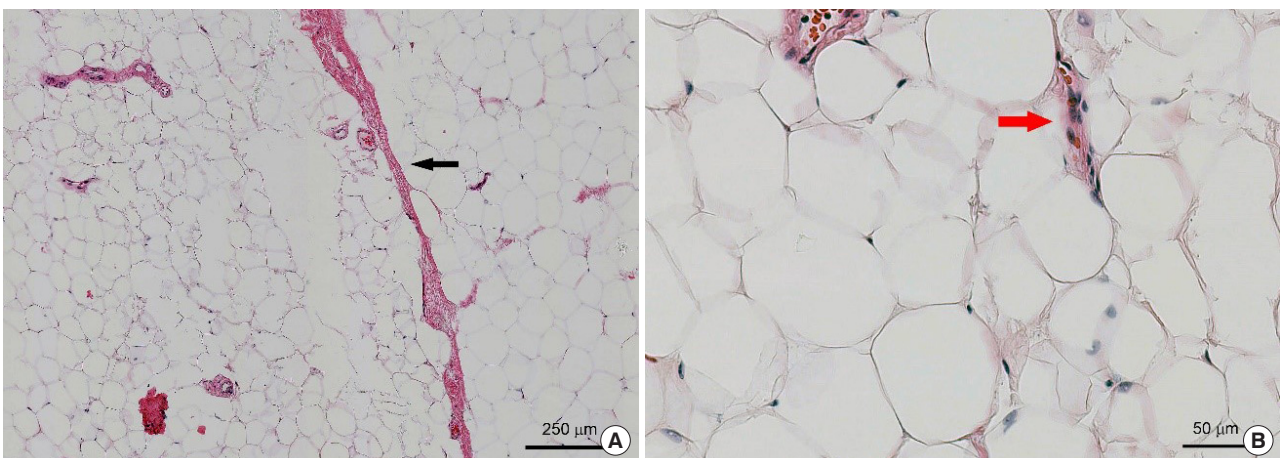


Fig. 2. Histopathologic examination. (A) Low-power view of a well-circumscribed lipomatous lesion (black arrow; H&E, ×40). (B) High-power view of well-matured lipocytes with intermingled fibrovascular stroma (red arrow; H&E, ×200).

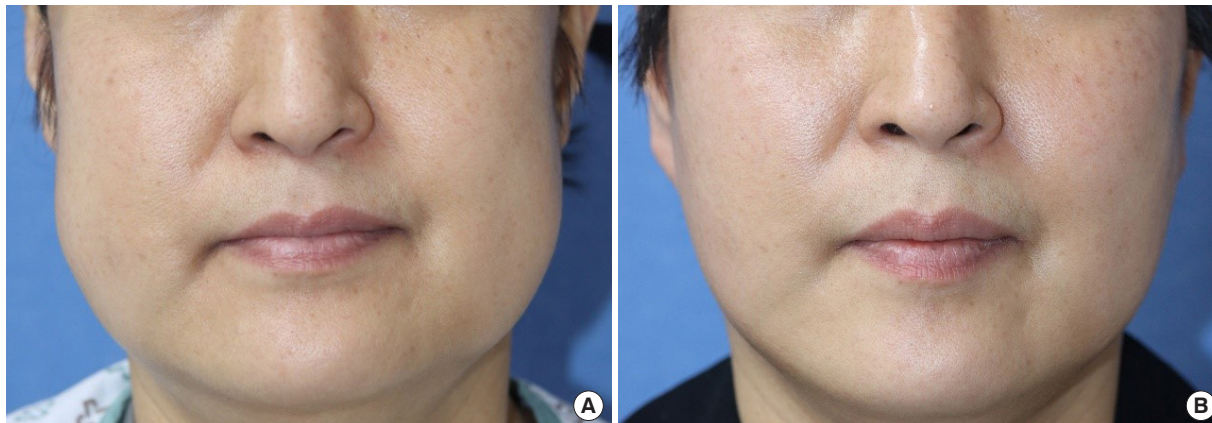


Fig. 3. Preoperative and postoperative photographs. (A) Preoperative photograph; bilateral bulging of the cheeks resulting in a square appearance of the face. (B) Six-month postoperative photograph; the facial contour improved, without bulging.

Although the etiology of lipoma has not been conclusively elucidated, the occurrence of subcutaneous lipoma is related to hereditary factors, obesity, diabetes, radiation, endocrine disorders, insulin injections, corticosteroid therapy, and trauma [1]. The incidence of lipoma is particularly high in people with obesity, hyperlipidemia, and diabetes [13]. The patient in this case complained of cheek protrusion accompanying weight gain after starting to take tamoxifen. Tamoxifen causes male-pattern and visceral obesity through anti-estrogenic effects, and its use may be accompanied by fatty liver and hypertriglyceridemia [14].

The gold standard for subcutaneous fat reduction is liposuction, but liposuction of the face is difficult. Some patients also find liposuction burdensome; therefore, injection lipolysis, which has the advantages of less invasiveness and minimal downtime, is useful. PC-DC, the main drug used for injection lipolysis, makes lipids water-soluble and causes fat cell destruction [15]. The patient in this case complained that both cheeks protruded more after receiving subcutaneous PC-DC injections. Subcutaneous injections of PC-DC have been found to reduce the expression of genes related to hormonal activity in adipocytes, such as leptin, adipose triglyceride lipase, and hormone-sensitive lipase [16]. In particular, leptin is a potent stimulator of lipolysis and fatty acid oxidation that regulates lipolysis by controlling the activity of hormone-sensitive lipase [17].

The patient in this case reported no history of diabetes or facial trauma, but stated that she had gained 10 kg of weight after taking starting to take tamoxifen 4 years ago, during which time cheek protrusion developed. Lipomas are more common in obese persons. Moreover, lipomas tend to present following a period of weight gain and often increase in size during a period of rapid weight gain [18,19]. Common tamoxifen attributed side effects were hot flashes, vaginal dryness, sleep problems,

weight gain, and depression, irritability or mood swings. Among the side effects, weight gain is the only side effect that seems to increase report with duration of tamoxifen use [20]. Since the anti-estrogenic effects of tamoxifen can cause weight gain, and weight gain increases the incidence of lipoma, tamoxifen use may have contributed to the occurrence of lipoma in the buccal fat pads. Moreover, the patient complained that both protruding cheeks became even worse after undergoing injection lipolysis including PC-DC to reduce adipose tissue in both cheeks at a plastic surgery clinic a year ago. This may have occurred because the PC-DC injection inhibited the lipolytic function of leptin, thereby leading to adipose tissue accumulation. However, no studies have been reported on the definite mechanisms related to PC-DC and lipoma occurrence, so further studies are expected.

In conclusion, when evaluating lesions suspected to be lipomas, careful attention should be paid to the patient's medication use and surgical history. Our case suggests that tamoxifen-induced weight gain and subcutaneous PC-DC injections can promote lipoma incidence and growth. Additional reports of similar cases are expected. Further research on the mechanism of fat accumulation will be necessary.

NOTES

Conflict of interest

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

Ethical approval

The study was approved by the Institutional Review Board of Inje University (IRB No. 2021-08-038).

Patient consent

The patient provided written informed consent for the publication and the use of her images.

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