

Novel Technique for Obtaining Aesthetic Results in Multiple Lipomatosis Surgery

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Introduction: Multiple lipomatosis is often perceived as a cosmetically disfiguring condition, and therefore, patients seek treatment. Multiple lipomas are commonly treated with excision or liposuction or a combination of both. To obtain a better aesthetic result, various modifications of the above have been tried, like using remote small incision, squeeze delivery technique, and endoscopic-assisted removal. We have used a combination of the above techniques, with the aim of removing the maximum number of lipomas with fewer and smaller incisions. The ultimate outcome is that the patient has a less scarred body.

Methods: This is a nonrandomized uncontrolled case series, conducted over 3 years from 2018 to 2021. It included all patients with visible multiple lipomas over upper limbs, lower limbs, chest, abdomen, and back. A total of 30 patients were operated on. The technique used in all patients was liposuction, limited incisions, tunneling, and squeezing out the lipomas. The patients were regularly followed up for 6 months.

Result: Lipomas of various sizes were removed by the above mentioned technique. Early postoperative period bruising was noted in seven cases which needed no intervention. Two patients had hematoma collection and one seroma, which was managed with aspiration. Among the 30 patients, 90% were pleased with the cosmetic result, and recurrence was seen in five cases.

Conclusions: Our modified technique of treating multiple lipomatosis gives a good aesthetic result and high patient satisfaction for a short-term study. However, comparable and long-term studies need to be performed for more conclusive results. (*Plast Reconstr Surg Glob Open* 2022;10:e4399; doi: 10.1097/GOX.0000000000004399; Published online 5 July 2022.)

INTRODUCTION

Lipoma is a benign fat cell tumor, which can occur in any part of the body. It is commonly encountered in the clinical practice,¹ with a prevalence of 2.1 per 1000 population.² It has a smooth surface and is soft to palpate and mobile. Depending on the other components mixed with the fat cells, their characteristics vary. For example, fibrolipoma with fibrous component is firm to palpate and neurofibrolipoma is firm and painful.

Similarly, it may occur as a solitary swelling or as multiple lipomatosis. They may be sporadic, familial (eg, hereditary multiple lipomatosis) or associated with syndromes. Some of the associated syndromes are Madelung disease, Gardner

syndrome, multiple endocrine neoplasia type 1, Cowden syndrome, and Bannayan-Riley-Ruvalcaba syndrome.^{3,4}

Multiple lipomas are cosmetically disfiguring and affect the patient's quality of life, making them essential to treat. Commonly employed treatment methods include excision and liposuction. Excision results in a scar over the swelling, which is aesthetically unappealing, especially when dealing with multiple swellings. Liposuction, though effective, cannot fully remove the lipoma. Therefore, a combination of the two is more effective.

In our study, we have employed both the techniques with some modifications to give the patient a complete yet aesthetic result. Initial liposuction of the area with multiple lipomas is done to downsize the swelling, break its neighboring attachments, and create tunnels. These tunnels aid in the removal of the lipoma from a remote incision site by providing a channel to squeeze them out. The aim of our study is to present our combined technique

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for multiple lipoma treatment with complication rate and patient satisfaction after surgery.

MATERIALS AND METHODS

This is a nonrandomized uncontrolled case series, conducted over 3 years from 2018 to 2021. It included all patients with visible multiple lipomas over upper limbs, lower limbs, chest, abdomen, and back. Patients undergoing other combined procedures such as liposuction for lipodystrophy were excluded from the study. Those with painful lipomas were also excluded. A total of 30 patients, 29 men and 1 woman, were operated on. The technique used in all patients was liposuction, limited incisions, tunneling, and squeezing out the lipomas. The patients were assessed on the third day, seventh day, and 15th day, at 1 month, and then at 6 months postoperatively for aesthetic results and any complications.

The surgery was performed under local or general anesthesia, based on the number of lipomas present. By combining the minimum number of incisions with liposuction, tunneling, and squeeze technique, multiple lipomas can be extracted without producing numerous scars.

All the lipomas were marked preoperatively. A 1-cm incision over the largest lipoma was made, through which the area involving the lipomas was infiltrated with a tumescent fluid using a 3-mm infusion cannula. This fluid contained 15 ml of 2% lignocaine, 10 ml of 0.5% bupivacaine hydrochloride, 10 mg triamcinolone acetonide, and 2 ampules of adrenaline in 1 L of Ringer's lactate solution (1:1000 dilution). Liposuction was performed in the area involving the lipomas using a 4-mm helical triport MicroAire power-assisted liposuction system. Liposuction reduces the volume of the lipoma which facilitates their removal through a smaller incision. Through the same incision, the tunnels created by liposuction were widened to access the other lipomas. Once a passage was made for the lipoma, it was pushed out through the tunnel manually or with the help of curved artery forceps, and finally squeezed out through the incision site. There was no bleeding postsurgery. The incisions were closed in simple sutures with 4-0 Ethilon, which was removed 7 days postsurgery. An elastocrepe bandage was applied to extremities, and elastic adhesive bandages (Johnson & Johnson) were applied to the operated areas. On the third day after surgery, the bandages were removed and the patient was made to wear a compressive pressure garment. This was retained for 1 month. The patient was reviewed at 3 days, 7 days, 2 weeks, 1 month, and 6 months thereafter. The wounds healed well without any complications and with no disfiguring scars. Preoperative and postoperative results can be appreciated in the following figures and video. (Figs. 1–12; Table 1). (See Video [online], which displays the surgical process of lipoma removal.)

RESULTS

A total of 30 patients with multiple lipomas in various regions like the chest, abdomen, back, upper limbs

Summary

Question: Can we give aesthetically pleasing results to a patient with multiple lipomatosis?

Findings: By combining multiple techniques like liposuction, tunneling, and squeezing; multiple lipomas can be treated with minimal scarring and aesthetically pleasing results.

Meaning: The above mentioned techniques give aesthetically pleasing results in multiple lipomas.

and lower limbs had their lipomas removed removed by liposuction, tunneling, incision, and squeeze technique. Patients' age ranged from 25 to 53 years; 29 were men, and one was a woman. All 30 patients had lipomas in extremities, 12 in the abdomen, 2 in the chest, 14 in the back, and 2 in the buttock region. An average of five lipomas were



Fig. 1. Patient 1, preoperative anterior view.



Fig. 2. Patient 1, postoperative anterior view.



Fig. 3. Patient 1, preoperative posterior view.



Fig. 4. Patient 1, postoperative posterior view.



Fig. 5. Patient 1, preoperative left lateral view.



Fig. 6. Patient 1, postoperative left lateral view.



Fig. 7. Patient 1, preoperative right lateral view.

removed with a single incision. The total number of lipomas removed from a single patient ranged from 27 to 105 (average 58.3). Postoperatively, bruising was seen in seven patients, which subsided without any intervention. Two patients had hematoma collection and one had seroma collection that was aspirated once, and no further collection occurred. All patients were analyzed for satisfaction level which amounted to 63.3% being very satisfied, 26.6% satisfied, and 10.1% with a neutral response. Recurrence was noted in five cases.

DISCUSSION

Lipoma, being a benign disorder, does not warrant an immediate treatment; however, multiple lipomas are aesthetically unpleasant and therefore compel the patient to seek treatment. The treatment options include direct excision, liposuction, laser lipolysis, or a combination of these techniques. However, direct excision does not seem a practical option in multiple lipomas; first, the duration



Fig. 8. Patient 1 postoperative right lateral view.



Fig. 9. Patient 2, preoperative anterior view of the torso.



Fig. 10. Patient 2, postoperative anterior view of the torso.



Fig. 11. Patient 2, preoperative anterior view of the thighs.



Fig. 12. Patient 2, postoperative anterior view of the thighs.

of surgery would be prolonged, and second, the resulting scars would be many.

Liposuction is a good choice. Choi et al⁵ treated 31 lipomas ranging from 1.2 to 11 cm in diameter from the head, neck, trunk, and extremities with the use of tumescent

liposuction. The rate of successful removal of lipomas was 74%, with the rest showing partial removal.

Al-basti and El-Khatib⁶ treated 16 lipomas, 4 to 25 cm in size, with liposuction followed by capsule extraction. In larger lesions, a separate 1-cm incision was made to help easily remove the capsule. The postoperative complications were insignificant and there were no recurrences even after 3–4 years of follow-up.

Table 1. Patient Demographic and Result Data

Serial Number	Age	Gender	Regions Involved	No. Lipomas Removed	Complications	Recurrence	Satisfaction Scale
1	36	Male	Upper limb, thighs, abdomen, back	105	Bruises	No	Very satisfied
2	35	Male	B/L upper limb, chest	43	Bruises	No	Very satisfied
3	43	Male	B/L upper limb, abdomen, thighs	78	Nil	No	Satisfied
4	42	Male	Upper limbs, abdomen	52	Nil	No	Very satisfied
5	32	Male	Upper limbs	27	Nil	Yes	Very satisfied
6	29	Male	Upper limbs	31	Nil	No	Neutral
7	32	Male	Upper limbs, thighs, trunk, back, buttock	98	Hematoma, bruises	Yes	Satisfied
8	28	Male	Upper limbs	28	Prominent scars	No	Very satisfied
9	27	Male	Upper limbs	32	Hematoma left forearm	No	Satisfied
10	29	Male	Upper limbs	27	Nil	No	Satisfied
11	22	Male	Upper limbs	31	Nil	Yes	Very satisfied
12	37	Male	Forearm	33	Nil	Yes	Very satisfied
13	28	Male	Upper limbs	40	Nil	No	Very satisfied
14	38	Male	Upper limbs, thighs, abdomen, back	97	Bruises	No	Neutral
15	31	Male	Upper limbs, chest	43	Nil	No	Very satisfied
16	28	Male	Upper limbs, thighs, trunk, back	76	Bruises	No	Very satisfied
17	26	Male	Upper limbs, thighs, abdomen, back, buttock	87	Seroma	No	Satisfied
18	37	Male	Upper limbs, thighs, abdomen, back	102	Nil	No	Very satisfied
19	32	Male	Upper limbs, thighs, abdomen, back	99	Nil	No	Very satisfied
20	36	Male	Upper limbs, thighs, abdomen, back	76	Bruises	No	Satisfied
21	32	Male	Upper limbs	44	Bruises	No	Very satisfied
22	53	Male	Upper limbs, thighs, abdomen, back	68	Nil	No	Very satisfied
23	30	Male	Upper limbs, thighs, back	56	Nil	No	Satisfied
24	36	Male	Upper limbs, thighs, back	72	Nil	No	Satisfied
25	26	Male	Upper limbs, thighs, abdomen, back	52	Nil	No	Very satisfied
26	31	Male	Upper limbs, thighs, abdomen, back	103	Nil	No	Very satisfied
27	25	Male	Upper limbs	31	Nil	No	Very satisfied
28	26	Male	Upper limbs, abdomen, back	46	Nil	No	Very satisfied
29	30	Male	Forearm	28	Nil	No	Very satisfied
30	27	Female	Upper limbs, thighs	44	Nil	No	Neutral

Liposuction has been used over the years for removing or reducing the lipomas, but a complete removal is difficult when the fibrous component is more.⁷ Laser lipolysis has also been tried, especially in more fibrous lesions, to lyse the fibrous connections and liquefy the fat.⁸⁻¹⁰ The liquefied fat is then expressed out by manual pressure, suctioned out by liposuction cannula, and the rest is left for partial reabsorption.

Goldman and Wollina¹¹ used a 1064-nm neodymium:yttrium aluminum garnet (Nd:YAG) laser in a series of 20 patients and stated 83.3% of lesions resolved or significantly reduced. Postoperative complications included edema and ecchymosis.

Saluja¹² used dual wavelength (1064/1320nm) as pretreatment laser lipolysis and successfully removed two lipomas along the triceps muscle. He states that with lipolysis the dimpling is minimized and so is postoperative scarring and hematoma formation, compared to doing liposuction alone.

However, 10%–18% of lipomas showed incomplete removal with laser lipolysis.⁵ It is not effective with lipomas more than 20 cm, deep within the muscle or anatomically complex areas.

Combining liposuction with excision facilitates a complete removal of lipomas through smaller incisions. Copeland-Halperin et al¹³ used the combined liposuction and excision method, and removed lipomas from the head, neck, trunk, and extremities ranging 1–15 cm in diameter. In the early postoperative period, hematomas and seromas were seen as complications, which were managed by aspiration. However, 92% of the patients were uniformly content with the cosmetic outcome. There were no recurrences. Our patient satisfaction rate of 89.9% is comparable with this study.

Our study is an extension of the combined liposuction and excision technique, where we have tried to reduce the number of incisions as well. The liposuction tunnels have been used to expel the remote lipomas by pressure. The squeeze technique helps remove lipomas through smaller incisions. The length of the incisions used in our study ranged from 1 to 2 cm. The procedure described above can be used by surgeons to remove many lipomas involving a certain area with ease. If they are spread out over a very large area, it may not be possible to access all of them through just one incision. For cases in which a few other incisions may be necessary, this decision is made on the table by the surgeon. One needs to be careful while operating in the sites of superficial vessels and nerves, such as cubital fossa, wrist, and ulnar groove, to avoid injury to the neurovascular structure.

The merits of our study in comparison with the other studies are a larger sample size with higher satisfaction rate and minimal complications. The limitation of our study is a short follow-up period and a lack of control group.

Our technique of multiple lipoma treatment is easy to perform. The patient satisfaction rate is higher and complications are lower in a short follow-up period. Further studies with longer follow-up and larger sample size are needed for the confirmation of this technique.

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