Post Cancer Treatment: Whistle Deformity Lip Reconstruction

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ABSTRACT

A whistle deformity is defined as a deficiency in the vertical length of the lip so that the free margins of the upper and lower lips do not meet normally, and gives the appearance of whistling. This is a common secondary deformity of the vermilion in patients with cleft lip.

We present a case of a 61-year-old male patient who developed a squamous cell carcinoma on his left lower lip, which was initially excised with positive margins and he subsequently developed lymphadenopathy within the left neck. It was decided that the patient would receive hyaluronic acid-based injectable tissue filler for temporary augmentation. Following the tissue filler injection, it was noted that the patient had closure of the lateral lip margins, improvement in lip competence and overall appearance of the lip. A decision was then made to proceed with autologous microfat transplantation to the lip. The donor site chosen by the senior author was the abdomen and a series of three injections were planned at six month intervals. For the first microfat injection, approximately 5 cc's of fat were aspirated using the Coleman harvesting cannulae and injected into the lip area using a Coleman type III cannula. Six months later, the patient presented for his second microfat injection. A total of 5 cc's of fat were infiltrated using the microfat transplantation technique. A final procedure using 3 cc's of fat was performed six months later using the technique described above. All three procedures were tolerated very well and there were no complications. At the one-year follow up appointment, the patient was pleased with the overall result and he noted marked improvement of his one competence and overall appearance of the lip (Figure 2).

Case Presentation

A 61-year-old male patient, developed a squamous cell carcinoma on his left lower lip, which was initially excised with positive margins and he subsequently developed lymphadenopathy within the left neck. He was then referred to the Otolaryngology Head and Neck Surgery service at the Queen Elizabeth II Health Sciences Center in Halifax, Nova Scotia, Canada and underwent a second wedge resection of the left lower lip with an epidermal/fundamental neck dissection. He received postoperative radiotherapy to the lip and neck at a total dose of 50 Gy. As a result of his combined morbidity treatment, he developed a whistle deformity. He was referred to another member of the head and neck team who失误ed in plastic facial surgery for potential fat augmentation and reconstruction of his lower lip (Figure 1). It was decided that the patient would receive hyaluronic acid-based injectable tissue filler for temporary augmentation, followed by treatment with autologous microfat transplantation to the lip for definitive augmentation. Following the tissue filler injection, it was noted that the patient had closure of the lateral lip margins, improvement in lip competence and overall appearance of the lip. However, upon reassessment three months later, the patient reported having issues with lip incompetence once again, due to the relatively premature degradation of the tissue filler injection and subsequent reformation of his whistle deformity. We present a case of a 61-year-old male patient who developed a squamous cell carcinoma on his left lower lip, which was initially excised with positive margins and he subsequently developed lymphadenopathy within the left neck. He was then referred to the Otolaryngology Head and Neck Surgery service at the Queen Elizabeth II Health Sciences Center in Halifax, Nova Scotia, Canada and underwent a second wedge resection of the left lower lip with an epidermal/fundamental neck dissection. He received postoperative radiotherapy to the lip and neck at a total dose of 50 Gy. As a result of his combined morbidity treatment, he developed a whistle deformity. He was referred to another member of the head and neck team who失误ed in plastic facial surgery for potential fat augmentation and reconstruction of his lower lip (Figure 1). It was decided that the patient would receive hyaluronic acid-based injectable tissue filler for temporary augmentation, followed by treatment with autologous microfat transplantation to the lip for definitive augmentation. Following the tissue filler injection, it was noted that the patient had closure of the lateral lip margins, improvement in lip competence and overall appearance of the lip. However, upon reassessment three months later, the patient reported having issues with lip incompetence once again, due to the relatively premature degradation of the tissue filler injection and subsequent reformation of his whistle deformity.

RESULTS

In summary, the use of autologous fat grafting has been successfully employed previously in facial, lip, and hand rejuvenation, and also for body contour improvement (1). In this case, hyaluronic acid-based injectable tissue filler resulted in temporary augmentation, and the use of microfat transplantation to the lip was used definitively for reconstruction of his lower lip. A decision was then made to proceed with autologous microfat transplantation to the lip. The donor site chosen by the senior author was the abdomen and a series of three injections were planned at six month intervals. For the first microfat injection, approximately 5 cc's of fat were aspirated using the Coleman harvesting cannulae and injected into the lip area using a Coleman type III cannula. Six months later, the patient presented for his second microfat injection. A total of 5 cc's of fat were infiltrated using the microfat transplantation technique. A final procedure using 3 cc's of fat was performed six months later using the technique described above. All three procedures were tolerated very well and there were no complications. At the one-year follow up appointment, the patient was pleased with the overall result and he noted marked improvement of his one competence and overall appearance of the lip (Figure 2).

REFERENCES


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CONCLUSION

A Whistle deformity is a common secondary deformity of the vermilion in patients with cleft lip (5). It is defined as a deficiency in the vertical length of the lip so that the free margins of the upper and lower lips do not meet normally, and gives the appearance of whistling (6). For the repair of lesser secondary deformities of the vermilion, there are numerous options available, including local flaps, Z-plasties, and fat grafts (6). We believe that our case is the first reported case in the English literature, in which autologous microfat grafting was used to treat a whistle deformity of the lip in a patient with two previous lip surgeries and postoperative radiotherapy. By comparison, a recent study by Patel and Hall described the use of free derma-fat grafting to correct the whistle deformity in patients with cleft lip (5). However, our case differs significantly given the fact that our patient had two previous lip operations and also received postoperative radiotherapy, both of which potentially reduce graft viability secondary to decreased vascularity of the recipient site.

In order to obtain long-term viability of transplanted autologous fatty tissue, clinicians have devised techniques to aspirate the adipose tissue in order to minimize the exposure to the adipocytes (1). Some of the current methods include the Coleman technique, fat cylinder grafting and the LipiVage fat harvested system (3, 4). Currently, the method of choice resides with the preference of the surgeon performing the procedure.

The use of autologous fat grafting has been successfully employed in facial, lip, and hand rejuvenation, and also for body contour improvement (1). In this case, hyaluronic acid-based injectable tissue filler resulted in temporary augmentation, and the use of microfat transplantation to the lip was used definitively for reconstruction of his lower lip. A decision was then made to proceed with autologous microfat transplantation to the lip. The donor site chosen by the senior author was the abdomen and a series of three injections were planned at six month intervals. For the first microfat injection, approximately 5 cc's of fat were aspirated using the Coleman harvesting cannulae and injected into the lip area using a Coleman type III cannula. Six months later, the patient presented for his second microfat injection. A total of 5 cc's of fat were infiltrated using the microfat transplantation technique. A final procedure using 3 cc's of fat was performed six months later using the technique described above. All three procedures were tolerated very well and there were no complications. At the one-year follow up appointment, the patient was pleased with the overall result and he noted marked improvement of his one competence and overall appearance of the lip (Figure 2).

In summary, the use of autologous fat grafting has been successfully employed previously in facial cosmetic surgery, but little evidence exists for its use in reconstructive facial surgery following radiotherapy. This case demonstrates that microfat transplantation is a viable option for correcting a whistle deformity, not only after surgery, but also following adjuvant radiotherapy.

Figure 1. The whistle deformity before tissue filler and microfat injections.

Figure 2. One-year postoperative appearance of the lip following reconstruction. Note the improved contour and competence of the lower lip.

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