

Risk Factors for Early and Late Donor-Site Morbidity After Free Fibula Flap Harvest

Peng Li, MD,* Qigen Fang, MD,† Jinxing Qi, MD,‡ Ruibua Luo, MD,§
and Changfu Sun, MD||

Purpose: This article reports on the incidence of donor-site complications and identifies predictive factors for early and late donor-site complications.

Materials and Methods: From January 2007 through December 2012, 45 patients underwent free fibula flap reconstruction and their medical records were reviewed. They were asked to complete a questionnaire on the operated leg and they were evaluated for ankle stability and ambulatory status.

Results: One patient (2.2%) developed a complication owing to a hematoma, but no other patients had any complications. During the risk factor analysis, no domain was found to be statistically associated with early morbidity; late dysfunction was noted in 20 patients (57.1%), and of these cases, at least 2 symptoms were found in 10 patients (50%). The most common complication was numbness followed by toe contracture and abnormal ambulatory movement. During the risk analysis, the following domains affected late donor-site morbidity: harvested fibula length, operation time, and follow-up time. Furthermore, in cases with complications, patients with the osteocutaneous fibula flap complained more than patients with the osseous flap ($P = .07$).

Conclusion: Early donor-site morbidity was uncommon, but late morbidity occurred frequently. Harvested fibula length, operation time, and follow-up time were statistically linked to postoperative function.

© 2015 American Association of Oral and Maxillofacial Surgeons
J Oral Maxillofac Surg 73:1637-1640, 2015

The free fibula flap has been widely used for mandibular reconstructions since it was first introduced in 1975¹ and donor-site morbidity remains a major concern. Previous studies have addressed this topic,²⁻⁶ but it remains controversial, especially with regard to predictive factors for perioperative complications and postoperative function outcomes.^{2,3,6} Momoh et al⁴ found that preoperative chemotherapy could induce perioperative donor-site complications and Shindo et al⁵ reported that a history of heavy smoking was statistically associated with an increased incidence of early donor-site complications. This article presents the incidence of donor-site complications based on the

authors' experience and identifies predictive factors for early and late donor-site complications that have rarely been evaluated before.

Materials and Methods

The China Medical University (Shenyang, China) institutional research committee approved the study and all participants signed an informed consent agreement.

This was a retrospective study. Patients who underwent free fibula reconstruction from January 2007 through December 2012 were included in the study

*Resident, Department of Head Neck and Thyroid Surgery, Affiliated Tumor Hospital of Zhengzhou University, Zhengzhou, Henan, China.

†Resident, Department of Head Neck and Thyroid Surgery, Affiliated Tumor Hospital of Zhengzhou University, Zhengzhou, Henan, China.

‡Department Head, Department of Head Neck and Thyroid Surgery, Affiliated Tumor Hospital of Zhengzhou University, Zhengzhou, Henan, China.

§Professor, Department of Head Neck and Thyroid Surgery, Affiliated Tumor Hospital of Zhengzhou University, Zhengzhou, Henan, China.

||Department Head, Department of Oral Maxillofacial Surgery, School of Stomatology, China Medical University, Shenyang, China.

Address correspondence and reprint requests to Dr Fang: Department of Head Neck and Thyroid Surgery, Affiliated Tumor Hospital of Zhengzhou University, No 127, Dongming Road, Jinshui District, Zhengzhou, Henan, People's Republic of China; e-mail: qigenfang@126.com

Received September 29 2014

Accepted January 25 2015

© 2015 American Association of Oral and Maxillofacial Surgeons

0278-2391/15/00108-1

<http://dx.doi.org/10.1016/j.joms.2015.01.036>

and their medical records were reviewed. Early donor-site complications were complications (including partial necrosis, hematoma, etc) that occurred during the perioperative period; late complications were complications (including pain, numbness, weakness, etc) that occurred during follow-up. Patients were asked to be available for follow-up at 1, 3, 6, 12, 24, and 48 months after surgery. During each follow-up visit, the patient was questioned and examined carefully. Patients were asked to complete a questionnaire (Table 1) about the operated leg; they also were evaluated for ankle stability and ambulatory status.

The study consisted of 45 patients (23 male and 22 female). The mean age was 47.2 years (range, 17 to 74 yr). Twenty-one patients (46.7%) had received a primary school or middle school education, and the remainder had received a high school or university education.

Fourteen patients (31.1%) had a history of smoking and 12 (26.7%) had a history of alcohol abuse. Primary diagnoses were benignity in 20 cases (44.4%) and malignancy in 25 (55.6%). Six patients (13.3%) had an osseous fibula flap and 39 patients (86.7%) had an osteocutaneous fibula flap. The size of the skin paddle in the osteocutaneous flaps varied from 2 to 60 cm², and the mean length of the harvested fibula was 15.4 cm (range, 8 to 21 cm). In all cases, primary closure was performed at the donor sites. The mean operation time was 10 hours (range, 6.3 to 15.5 hours). The volume of suction drainage ranged from 68 to 614 mL. The mean postoperative hospital stay was 11.9 days (range, 7 to 27 days). Five patients died of disease and there was no follow-up information for 5 patients. Therefore, 35 patients (18 male and 17 female) were included in the late donor-site morbidity evaluation.

Dissection of the fibula flap was performed as described previously.^{1,4,7} During the operation, 5 cm of proximal bone and 7 to 8 cm of distal bone were left in situ to preserve knee and ankle stability. When an osteocutaneous flap was needed, a perforator dissection was performed through the soleus and flexor hallucis longus muscles. All donor sites were closed primarily after carefully evaluating the wound tension.

The χ^2 test and bivariate correlation analysis were used to assess the risk factors for early and late donor-site complications. All statistical analyses were performed using SPSS 13.0 (SPSS, Inc, Chicago, IL). A *P* value less than .05 was considered significant.

Results

EARLY DONOR-SITE MORBIDITY

A hematoma was reported for 1 patient, with no long-term consequences. No other complications, such as partial necrosis or compartment syndrome,

Table 1. INFORMATION ELICITED BY THE QUESTIONNAIRE

Question	Answer
1. Do you feel pain in your operated leg?	yes or no
2. Do you feel numbness in your operated leg?	yes or no
3. Do you feel weakness of the operated leg when walking or performing daily activities?	yes or no
4. Do you feel edema in your operated leg?	yes or no
5. Do you feel cold in your operated leg?	yes or no

Li et al. Risk Factors for Donor-Site Morbidity. J Oral Maxillofac Surg 2015.

were noted. In the risk factor analysis, no domain was found to be statistically associated with early morbidity (Table 2).

LATE DONOR-SITE MORBIDITY

Dysfunction was noted in 20 patients (57.1%), and of these cases, at least 2 symptoms were found in 10 patients (50%; Fig 1). The most common complication was numbness, followed by toe contracture and abnormal ambulatory movement. In the risk analysis, late donor-site morbidity was affected by the following domains: harvested fibula length, operation time, and follow-up time. No statistical association was noted with age (<60 vs >60 yr; Table 2). Furthermore, patients with complications tended to complain more

Table 2. RISK FACTORS FOR DONOR-SITE MORBIDITY

Domain	Early Morbidity	Late Morbidity
Age	.094	.060
Gender	1.000	.845
Education	.467	.241
Smoking	.311	.451
Alcohol	.267	.266
Diagnosis	.444	.486
Systemic disease	.200	.422
Flap type	.133	1.000
Fibula length	.489	.041
Operation time	.603	.006
Suction drainage	.090	.932
Postoperative hospital stay	—*	.779
Follow-up time	—*	<.001

* The domain was not calculated.

Li et al. Risk Factors for Donor-Site Morbidity. J Oral Maxillofac Surg 2015.

Download English Version:

<https://daneshyari.com/en/article/3152339>

Download Persian Version:

<https://daneshyari.com/article/3152339>

[Daneshyari.com](https://daneshyari.com)