

Evidence Based Guideline

Free Vascularized Fibular Graft for Avascular Necrosis

File Name: free_vascularized_fibular_graft_for_avitascular_necrosis
Origination: 9/1999
Last Review: 5/2003

Active guideline, no longer scheduled for routine literature review.

Description of Procedure or Service

Free Vascularized Fibular Graft is a surgical procedure designed to provide a new blood supply to the head of the [femur](#). This is required for injuries to the head of the [femur](#) that result in the loss of the existing blood supply to the area. This procedure may be used in patients with segmental loss of bone in a long bone and for any number of other causes such as avascular necrosis, osteonecrosis, trauma, infection, tumor, tumor resection, or congenital pseudoarthrosis of bone.

This surgery involves drilling a hole into the head of the [femur](#). The necrotic, or dead bone tissue is removed from the area. A cancellous bone graft is harvested and packed into the cavity. Another bone graft is taken from the fibula (the thin bone in the lower leg). The blood vessels are left attached to this bone graft. The graft is prepared and then placed into the drilled hole in the [femur](#) head. The blood vessels in the graft are attached to the blood supply in the area of the femur. This provides a fresh blood supply to the area.

Evidence Based Guideline for Free Vascularized Fibular Graft for Avascular Necrosis

Free Vascularized Fibular Graft for Avascular Necrosis may be appropriate for the following clinical indications:

- ◆ For a patient age 20 years old or less with Stage 5 or less changes in the head of the [femur](#) on the Marcus-Enneking system of classification
- ◆ For a patient age 50 years old or less with Stage 4 or less changes in the head of the [femur](#) on the Marcus-Enneking system of classification
- ◆ Free vascularized fibular graft for avascular necrosis is eligible for coverage only as a last resort for all diagnoses other than Avascular Necrosis or Osteonecrosis. These cases will be reviewed on an individual consideration basis.

Medical Evidence regarding Free Vascularized Fibular Graft for Avascular Necrosis indicates it is not recommended in the following situations:

Free Vascularized Fibular Graft for Avascular Necrosis is not recommended for Stage 6 changes in the head of the [femur](#) on the Marcus-Enneking scale. Studies have not shown the procedure to be effective at the later stage of deterioration.

Policy: Free Vascularized Fibular Graft for Avascular Necrosis

The Marcus-Enneking System of Classification for Necrosis of the Femur

Stage	Clinical	X-Ray	Gross Pathology	Microscopic Pathology
1	Asymptomatic	mottled areas of increased density	Normal	-area of infarct, usually anterior-lateral portion of head . -area of creeping substitution.
2	Asymptomatic	infarct demarcated by zone of increased density.	Normal	-advancing fibrovascular zone of repair -advanced creeping substitution
3	Onset of pain	crescent sign (subchondral radiolucency)	femoral head compressible like a tennis ball	-subchondral fracture through dead bone but cartilage intact.
4	Pain with activity	depression of lateral edge of infarct	osteochondral flap formed, hinged medially	-fracture through dead bone and cartilage -calcification of necrotic marrow in the infarct.
5	Pain with activity	flattening and compression of infarct	loose osteochondral fragment	erosion of infarct
6	Pain at rest	progressive compression and erosion of head superimposed degenerative arthritis	collapse of head	loss of articular cartilage

Benefits Application

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the policy.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 20900, 20902, 20955, 27052, 27641, S2325

Policy: Free Vascularized Fibular Graft for Avascular Necrosis

Medical Term Definitions

Femur

the long bone in the thigh. It extends from the pelvis to the knee.

Scientific Background and Reference Sources

Marcus ND, Enneking WF, Massam RA. The Silent Hip in Idiopathic Aseptic Necrosis. *TriangleOrtho Surgery* 1973; (55A, No. 7)1351-66

Yoo MC, Chung DW, Hahn CS. Free Vascularized Fibula Grafting for the Treatment of Osteonecrosis of the Femoral Head. *Kyung Hee Medical Center* 1992;(277)128-138

Urbaniak JR, Coogan PG, Gunneson EB, Nunley JA. Treatment of Osteonecrosis of the Femoral head with Free Vascularized Fibular Grafting, A Long Term Follow-up Study of one Hundred and Three Hips, *Journal of Bone and Joint Surgery* 1995;(77A, no.5) 681-694

Aluisio FV, Urbaniak JR. Proximal femur fractures after free vascularized fibular grafting to the hip. *Clin Orthop* 1998; Nov (356):192-201

4/99 - Independent Consultant reviews

BCBSA Medical Policy Reference Manual - 7/16/99

Specialty Matched Consultant Advisory Panel - 11/1999

Medical Policy Advisory Group - 12/2/1999

Specialty Matched Consultant Advisory Panel - 8/01

BCBSA Medical Policy Reference Manual - 4/15/2002; 7.01.70

Specialty Matched Consultant Advisory Panel - 5/2003

Policy Implementation/Update Information

9/99 Original Policy issued

12/99 Reaffirmed, Medical Policy Advisory Group

3/01) System change

10/01 Specialty Matched Consultant Advisory Panel - 8/01. Description revised. No change in criteria. Typos corrected.

5/03 Specialty Matched Consultant Advisory Panel review. Policy status changed to: "Active policy, no longer scheduled for routine literature review". Typos corrected.

4/04 Benefits Application and Billing/Coding sections updated for consistency.

9/18/06 Medical Policy changed to Evidence Based Guideline. (adn)

6/22/10 Policy Guideline Number(s) removed (amw)

Policy: Free Vascularized Fibular Graft for Avascular Necrosis

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.