

Iliac crest reconstruction to reduce donor-site morbidity: technical note

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Abstract The design of the study includes case series, technical note and review of the literature. Autogenous bone graft (autograft) harvest from the iliac crest remains the gold standard substrate for spinal fusion. Persistent donor-site pain is the most common cause of morbidity after autograft harvest, occurring in one-third of patients. Numerous techniques for reducing donor-site morbidity have been reported in the literature, including infusion of analgesics and post-harvest reconstruction of the iliac crest with ceramics, allograft or bone morphogenic protein. A case series of patients undergoing spinal fusion surgery is reported. All patients were treated with iliac crest reconstruction using Calcium Phosphate Cement and follow-up data of persistent donor-site pain was collected. Twelve patients underwent autograft harvest with iliac spine reconstruction using Calcium Phosphate Cement. 42% (5) had persistent donor-site pain (after 3 months). All pain scores were less than or equal to 2 out of 10 (mean 1.25). In conclusion, iliac spine reconstruction using Calcium Phosphate Cement following autogenous bone graft harvest is a relatively simple procedure which failed to decrease the incidence of donor-site morbidity in our patient population.

Keywords Autogenous bone harvesting · Iliac crest pain · Donor-site morbidity · Reconstruction · Tri-calcium phosphate

Introduction

Autogenous bone graft (autograft) harvest is utilized by numerous surgical specialties including orthopedic, cranio-facial, dental and neurosurgery. Indications for graft harvest are vast and include surgery for post-traumatic injury, deformity correction, progressive degenerative disease and chronic pain. Despite advances in allogeneous bone graft preparation (allograft) and biologic treatments, autograft is still considered the gold standard substrate for bone grafting for numerous reasons including ease of harvesting, inexpensiveness, immune-compatibility, reduced infection risk and reduced potential for disease transmission [1–4]. The most common site of procuring bone substrate is the iliac crest. Many severe and major complications due to this harvesting procedure have been reported in the literature [5–8]. However, the most common complication is pain at the iliac crest donor-site, the precise cause of which remains poorly understood. We document a series of 12 patients undergoing iliac spine reconstruction following autograft harvest for spinal fusion, describe our operative technique using a Calcium Phosphate Cement and present a review of the literature.

Case series

A retrospective review of 12 patients who underwent iliac spine reconstruction after autograft harvest for spinal fusion surgery was conducted (Table 1). The visual analogue scale (VAS) was used to determine pain scores at between 3 and 6 months of follow-up [9].

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