

Bioactive glass versus autogenous iliac crest bone graft in adolescent idiopathic scoliosis surgery

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Abstract

Surgery on the skeleton frequently requires harvesting of autogenous bone graft from the pelvis, but this procedure is complicated by problems. The purpose of this retrospective, comparative descriptive study was to compare the efficacy of metal-derived bioactive glass (Novabone) versus autogenous iliac crest bone graft in adolescent idiopathic scoliosis surgery. The study was carried out on forty cases (aged 14-20 years) with 80 total curves fused for AIS. Posterior spinal fusion was performed using local bone grafts combined with autogenous iliac crest bone graft in 20 patients (group 1), and combined with Novabone in another twenty ones (group 2). The patients were observed for a minimum of 24 months after surgery, with a mean postoperative observation time of 34.7 months. The results were assessed clinically and radiologically. In group 1, average preoperative curve was 66° with immediate correction to 24.2° (36.7%) and final follow-up of 27.4° (39.3%), but in group 2 the calculated numbers included 63.8°, 20.8° (33.6%) and 28.4° (42.0%) respectively. There were 0 indeterminate fusions (2 cases in group 1 and 2 in the other group), 1 acute infection, and 1 hook dislodgement in the synthetic group. These results justify and favor the use of bone substitutes for instrumented posterior spinal fusion in AIS. Potentially hazardous harvesting of pelvic bone is no longer necessary for such operations. © 2009 Tehran University of Medical Sciences. All rights reserved.

Reaxys Database Information

Author keywords

Adolescent idiopathic scoliosis; Bone graft; Bone substitute; Spinal fusion

Indexed Keywords

EMTREE drug terms: antibiotic agent; glass; metal

EMTREE medical terms: adolescent; adult; article; autograft; bone graft; bone prosthesis; clinical article; clinical assessment; clinical effectiveness; controlled study; descriptive research; female; follow up; human; idiopathic scoliosis; iliac crest; male; postoperative care; postoperative complication; postoperative infection; preoperative evaluation; retrospective study; spine fusion; surgical technique

Device tradename: Novabone.

ISSN: 00446620 **CODEN:** AMEIAS **Source Type:** Journal **Original language:** English

Document Type: Article