SUGGESTED BONE GRAFT MATERIALS FOR USE IN AXIALIF FUSION PROCEDURES

TranS1, in conjunction with its surgeon advisory board members, has reviewed the AxiaLIF procedure, current literature on bone grafting, and factors that contribute to a successful fusion. Fusion success is dependent on proper disc preparation technique including a thorough discectomy with removal of the cartilaginous endplate and nuclear material. Appropriate bone graft material that is osteogenic, osteoinductive, and osteoconductive further improves the chances of fusion success.

Therefore, the recommended materials for use in L4-S1 or L5-S1 AxiaLIF fusion procedures include:

Iliac crest autograft with a volume of 5-8 cc per fused level. The autograft (generally harvested from the posterior iliac crest) can be combined with any osteoinductive agent and/or osteoconductive matrix, provided that these products are cleared for use as bone graft extenders when used with autograft bone. Products in this category include ceramic or allograft chips to add volume and bulk.[1]

OR

Bone Marrow Aspirate harvested directly from the iliac crest or vertebral body (pedicle approach) with at least 5 cc per fused level and no more than 2 cc per plunge.[2,3] The aspirate should then be combined with an osteoconductive matrix, ceramic, or allograft chips, which function as bulking agents.

It is not recommended to use the following materials ALONE in the interbody space:

Any FDA-cleared bone void filler that is not indicated as an osteoinductive agent

Local autograft, which can vary greatly in volume from patient to patient depending on bone quality and cortical-to-cancellous bone ratio.

If you have any questions regarding these recommendations, please feel free to contact TranS1.

[1] Vaccaro AR, Chiba K, Heller JG, Patel TC, Thalgott JS, Truumees JG, Fischgrund JS, Craig MR, Berta SC, Wang JC. Bone grafting alternatives in spinal surgery. The Spine Journal. 2002;2:206-15.

[2] Muschler GF, Boehm C, Easley K. Aspiration to obtain progenitor cells from human bone marrow: The influence of aspiration volume. JBJS [Am]. 1997;79-A(11):1699-1709.

[3] McLain RR, Fleming JB, Boehm CA, Muschler GF. Aspiration of osteoprogenitor cells for augmenting spinal fusion: Comparison of progenitor cell concentrations from the vertebral body and iliac crest. JBJS[Am]. 2005;87-A(12):2655-61.