Bone Collection Using the Tobra Bone Basket and Arthrex GraftNet™ XL Device

Arthrex Research

OBJECTIVE

This study was conducted to evaluate the Tobra Bone Basket in conjunction with the GraftNet XL bone collection device for collecting bone particulate during high-speed burring of porcine spine specimens, with a focus on sample loss. Quantitative analyses were performed to determine the volume of bone particulate captured in each device. Sample loss from the GraftNet XL bone collection device into the waste container was assessed to help characterize collection efficiency.[1]

METHODS AND MATERIALS

Bone particulate was collected from the lamina and facet of vertebrae in three porcine spines (n = 3) using a 4 mm round burr tip at maximum speed while maintaining specimen hydration to prevent operational damage. The sample was first passed through the Bone Basket, and any particulate lost in the effluent tubing was then captured in the GraftNet XL device. Bone particulate was collected until the Bone Basket device was full or clogged. The Bone Basket was held upright during specimen collection, and the GraftNet XL device was clipped to the table dressing using the provided packaged clip.

RESULTS

The percent loss of bone particulate from the Bone Basket into the GraftNet XL device was 19.64% ± 3.11%, after full collection. Waste loss into the effluent container averaged 1.29% ± 1.26% (Table 1). The Bone Basket collected an average total mass of 18.25 g ± 4.59 g, while the GraftNet XL device collected an average of 4.21 g ± 0.20 g lost from the Bone Basket device. The effluent waste had an average mass of 0.26 g ± 0.25 g.

Table 1. Percent loss of bone particulate from the Bone Basket device captured by the GraftNet XL device after full collection, and waste loss from the GraftNet XL device, with donor average and standard deviation (AVG ± SD).

	Bone loss from Tobra Bone Basket (%)	Bone loss from GraftNet XL device (%)
Donor 1	15.69	-0.07
Donor 2	19.98	1.53
Donor 3	21.81	2.40
AVG ± SD	19.16 ± 0.03	1.29 ± 1.26

Figure 1. Total collection from all donors (n = 3) by the Tobra Bone Basket (left) and the GraftNet XL device (right).

DISCUSSION AND CONCLUSION

The Bone Basket and GraftNet XL device were effective in capturing bone particulate. The amount of particulate waste lost in the effluent container was minimal, indicating that the Graft XL device successfully captured nearly all of the bone graft.

The Bone Basket reached capacity before its marketed maximum of 25 mL, indicating potential operational limitations. Nearly 20% of the total sample was lost by the Bone Basket device but effectively recovered by the GraftNet XL device. In contrast, only 6% of the total waste was found in the effluent container, indicating that the GraftNet XL device captured approximately 94% of the overall waste.

Reference

1. Arthrex, Inc. Data on file (APT-1162519). Naples, FL; 2026.

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