Stryker MicroFX OCD (OsteoChondral Drill) Results in Less Bone Compaction Around Microfracture Holes

Top-Level Summary:
The density of the bone was compared around microfracture holes created with the Stryker MicroFX OCD and the Linvatec awl. The Stryker MicroFX OCD drill resulted in significantly less bone compaction immediately around the microfracture hole.

Methods:
Microfracture holes were created in the condyles of six goats using either a 45 degree MicroFX OCD or a 45 degree awl. After 3 days the knees were harvested and the density of the bone in a cylindrical area from 0 to 0.5 mm adjacent to the microfracture hole was evaluated using microCT (uCT 80; SCANCO Medical, Bassersdorf, Switzerland). Significant differences were assumed at p≤0.05.

Results:
The bone around microfracture holes created with the drill was significantly less dense and had a consistent density when compared to the bone around holes created with the awl.

The bone around the microfracture holes created by the awl was very dense on one side - the side away from the direction of impaction (shown as a yellow arrow) and was less dense on the opposite side.

Clinical Relevance:
The Stryker MicroFX OCD drill resulted in significantly less bone compaction immediately around the microfracture hole providing more open channels for blood flow into the defect. Since the objective of creating microfracture holes is to encourage the flow of blood (with healing elements) into the defect in order to facilitate healing of chondral defects, use of the OCD drill may result in excellent blood flow.
A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

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References:
1. Technical Report #RD13-019 Rev. 1