

Histologic evaluation of high speed burr shavings collected during spinal decompression surgery

[Vikas V Patel](#)¹, [Susan M Estes](#), [Erick M Naar](#), [Emily M Lindley](#), [Evalina Burger](#)

Affiliations expand

PMID: 19226040

DOI: [10.3928/01477447-20090101-17](https://doi.org/10.3928/01477447-20090101-17)

Abstract

In spinal decompression and fusion surgery, a high speed burr is often used to remove bony material. The generated bone shavings are typically washed away and discarded. This study histologically examined the content of burr shavings to determine whether the collected tissue has the potential to augment local autograft. Our findings verified that burr shavings collected during spinal decompression are primarily composed of bone (65%) with blood product (32%). The bone shavings appear to remain viable after burring, as there was no microscopic evidence of damage to the cells. These findings indicate that bone shavings can be easily collected and could be added to local laminectomy bone with minimal cost. This technique is also beneficial given that it does not increase morbidity, as does iliac crest bone graft harvesting. Furthermore, the putty-like consistency of the bone shavings may facilitate the placement of morselized autograft bone. Despite these advantages, collected bone shavings are by no means a substitute for autograft or allograft bone. Their osteogenic potential is not comparable to that of iliac crest bone and the shavings lack the structural scaffolding of allograft bone. This technique, however, provides a resource for augmenting local autograft during spinal fusion, and is not associated with any significant cost or effort. Future studies should compare the clinical and radiographic fusion outcomes of high speed burr bony shavings combined with local laminectomy bone versus either iliac crest autograft or local laminectomy bone used with other bone graft extenders.