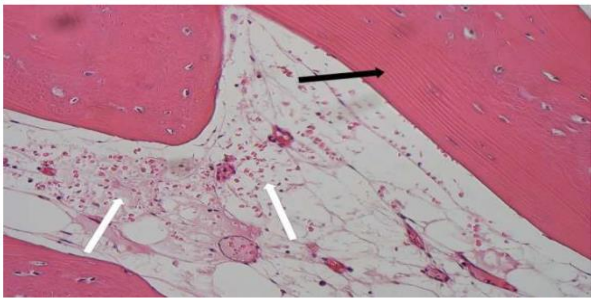
PAPER SUMMARY

Title	Histological Assessment of New Bone Formation with Biomimetic Scaffold in Posterolateral Lumbar Spine Fusion
Journal	J Biol Regul Homeost Agents Jul-Aug 2020;34(4 Suppl. 3):99-103.
Authors	Gioia G., Agnoletto M., Di Giancamillo A., Domenicucci M., Mangiavini L., Lombardo M., Peretti GM.
Study type	Case report
Product type	RegenOss, a new-generation composite material made of Mg-doped HA and type I collagen of equine origin
Indication	Postro-lateral fusion
Objective(s)	To describe: - <u>successful implantation</u> of RegenOss - <u>integration</u> with host bone - <u>formation of new bone</u> - complete <u>resorption of RegenOss</u> after 12 months.
RESULTS	
Patient demographic	58-year-old female requiring lumbar spine arthrodesis for kyphoscoliosis.
Surgery	Spinal arthrodesis from T5 to L5. Post-operative course was regular with no complications.
Revision surgery	Was required 11 months after first surgery because of spine imbalance. ➔ Revision surgery gave the opportunity to evaluate the area were the bone graft was applied.
Macroscopic and histological analysis	Macroscopic level: - No remnants of the implanted biomaterial visible; - Normal quality of new bone formation with dense bony mass formation. Histological analysis: - No presence of fibrous tissue at the interface with host bone; - Were BG was applied, presence of newly formed bone, with well-organized trabecular structure resembling healthy bone **(black arrow).**
	**Figure:** Black arrow: normal parallel lamellae in the trabecular bone at 1-year follow-up (haematoxylin-eosin staining). White arrows: red blood cells is visible within the bone marrow.

DISCUSSION

- RegenOss was successfully implanted during the arthrodesis procedure, showing good biocompatibility and no adverse events;
- The histological evaluation performed 12 months later because of spine imbalance showed:
  - The complete resorption of the implant;
  - The formation of new bone, which was well-integrated with host bone.

RegenOss represents a safe and effective alternative to autologous bone graft, avoiding adverse events related to donor side morbidity.