INTRODUCTION

The tooth is composed mostly of dentin, the highly mineralized collagenous matrix that supports the enamel. The odontoblast cells are responsible for the assembly, mineralization, maintenance and repair of the dentin matrix. The cell bodies remain at the outer edge of the pulp, and most of these activities are performed by thin cytoplasmic processes that extend from the cell bodies towards the dentin-enamel junction.

METHOD FOR SERIAL SECTION ELECTRON MICROSCOPY

1. Cardiac perfusion fix
2. Thin serial sections collected on a tape.
3. Attach sections on tape to a wafer.
4. Process with heavy metals and dehydrate
5. Embed tissue in epoxy resin block
6. Serial sections of 75 nm collected
7. The image were analyzed by a 3D reconstruction software (TrakEM2 /FIJI/ Image J).

Three-dimensional view of odontoblast process

A) Side view. B) Rotated 90 degrees.

CONCLUSION

Our results indicate that the shape of the odontoblast process is a plate, and not a tubule as the textbook figures indicate.

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REFERENCES