Ultrastructure of a novel anaerobic gram-positive nonsporing rod from dental root canal.

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A novel anaerobic Gram-positive rod, strain ES4C, was isolated from a dental root canal infection. The isolate did not produce acids from carbohydrates and showed no glycosidase activity. Most biochemical reactions were identical to Clostridium malenominatum with the exception of the production of three aminopeptidases. In addition, no spores were detected. A tetragonally arranged surface layer was consistently found by electron microscopy. The ultrastructure of closely related Eubacterium spp. was also studied, but no crystalline surface structures were found. The physiologic and ultrastructural characteristics of ES4C did not allow identification as any known species. The periapical lesion responded to routine root canal therapy, but after 18 months observation the radiologic signs indicated partial healing only.

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