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(21) International Application Number: PCT/US99/02563 (22) International Filing Date: 5 February 1999 (05.02.99) (71) Applicant: SURGIJET, INC. [US/US]; 34B Mauchly Street, Irvine, CA 92718 (US). (72) Inventors: VALDES, Juan, C.; 6064 Burgundy Avenue, Alta Loma, CA 91737 (US). BAILEY, Randal; 22025 Tanbark Lane, Lake Forest, CA 92630 (US). BALDWIN, Steve; 3045 Telegraph Avenue, Berkeley, CA 94704 (US). DOHERTY, Rex, E.; 34B Mauchly Street, Irvine, CA 92718 (US). (74) Agent: ZIMMERMAN, Harris; Law Offices of Harris Zimmerman, Suite 710, 1330 Broadway, Oakland, CA 94612-2506 (US).		(81) Designated States: AU, CA, CN, IL, JP, KR, MX, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>  *G00001*

(54) Title: METHOD AND APPARATUS FOR DENTAL TREATMENT USING HIGH PRESSURE LIQUID JET**(57) Abstract**

The invention is a method, and apparatus for dental procedures using a dental hydro-jet tool (35) having a cannula (34) extending therefrom. The cannula (34) is connected to a source of high pressure liquid, and delivers a high velocity, high pressure jet. For root canal procedures, the cannula (34) is directed through an opening (32) in the crown (11) of the tooth (10), the hydro-jet (35) is directed at the pulp, nerve, and vascular tissue within the interior chamber (26). The jet (36) may comprise medical grade saline, disinfectant, antibiotic or abrasive solutions. All the soft tissue within the tooth (10) is cut, excised, emulsified, and aspirated out of the tooth (10). The time required to excise, emulsify, and aspirate all the soft tissue within a typical molar is on the order of 10 seconds to 240 seconds. The interior chamber (26) of the tooth (20) is completely aspirated, verified visually for completion of removal of all soft tissue, and then packed with an appropriate filler material. The opening (32) in the top of the tooth (10) is filled or provided with a prosthetic crown. The fluid jet (36) may comprise a pulsed jet formed by a pulse intensifier device in the handpiece (33) of the dental hydro-jet tool (35), or steady stream jet emanating from the orifice. The jet (36) may be used for caries removal, plaque, calculus removal, and soft tissue surgery.

