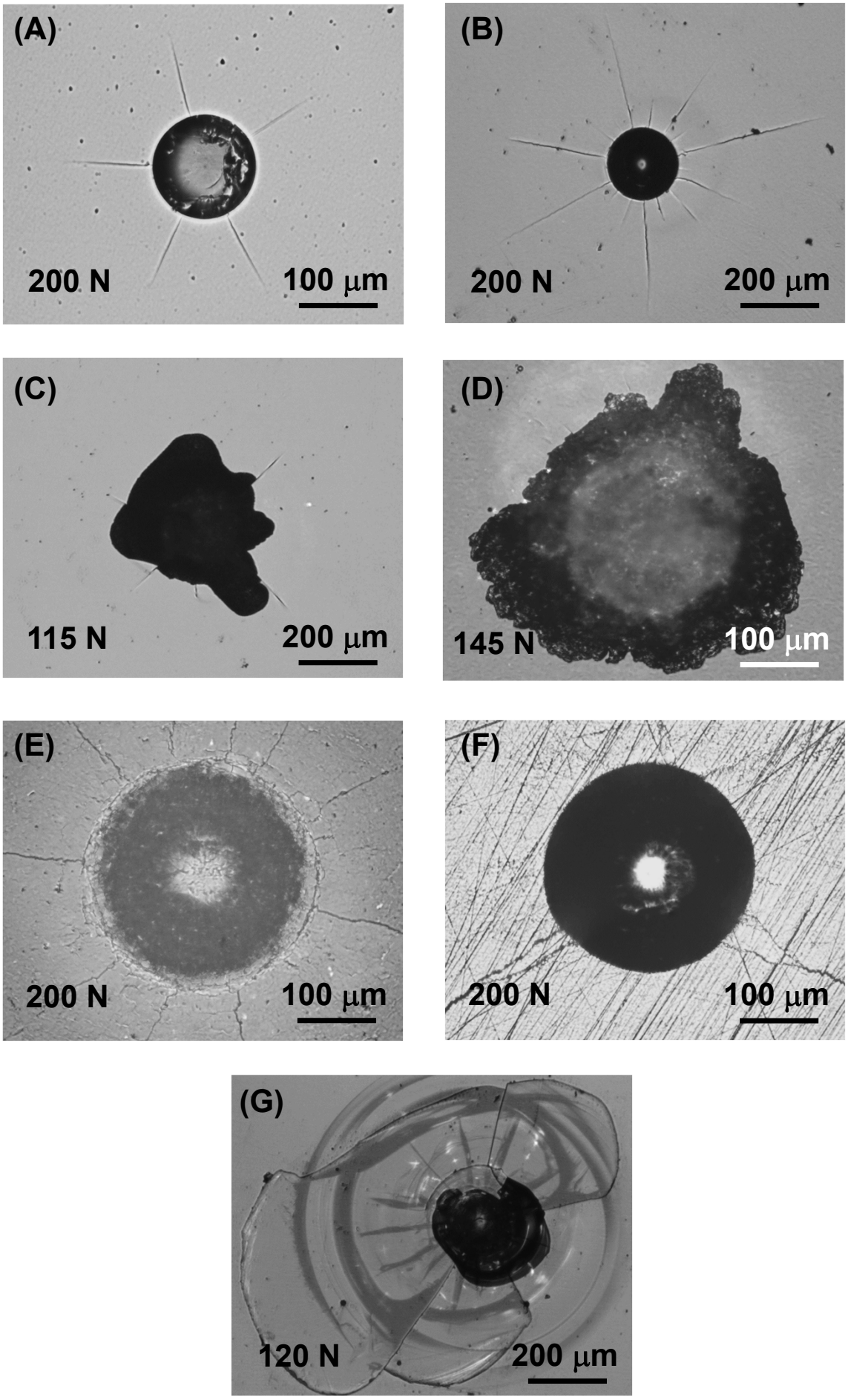
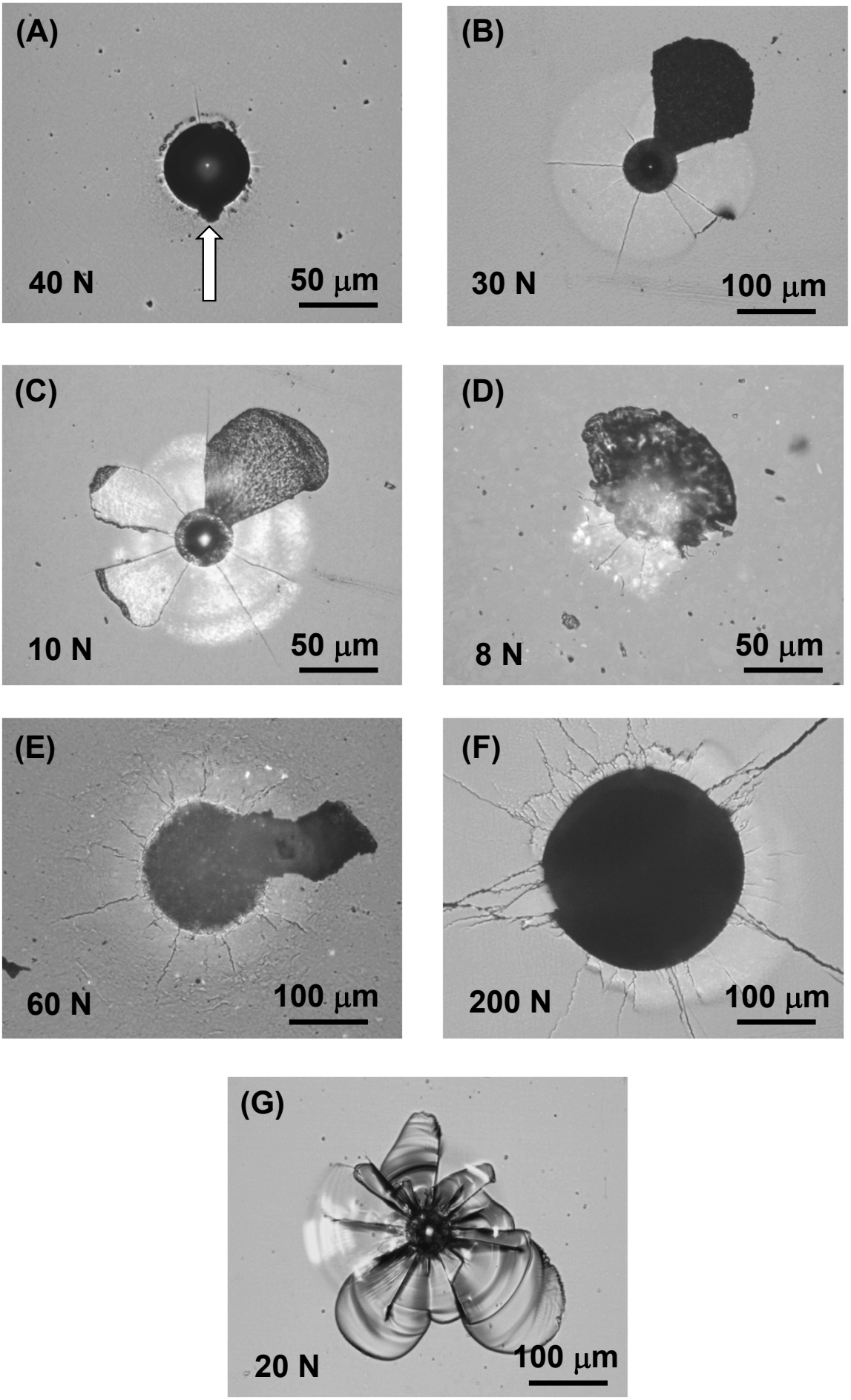


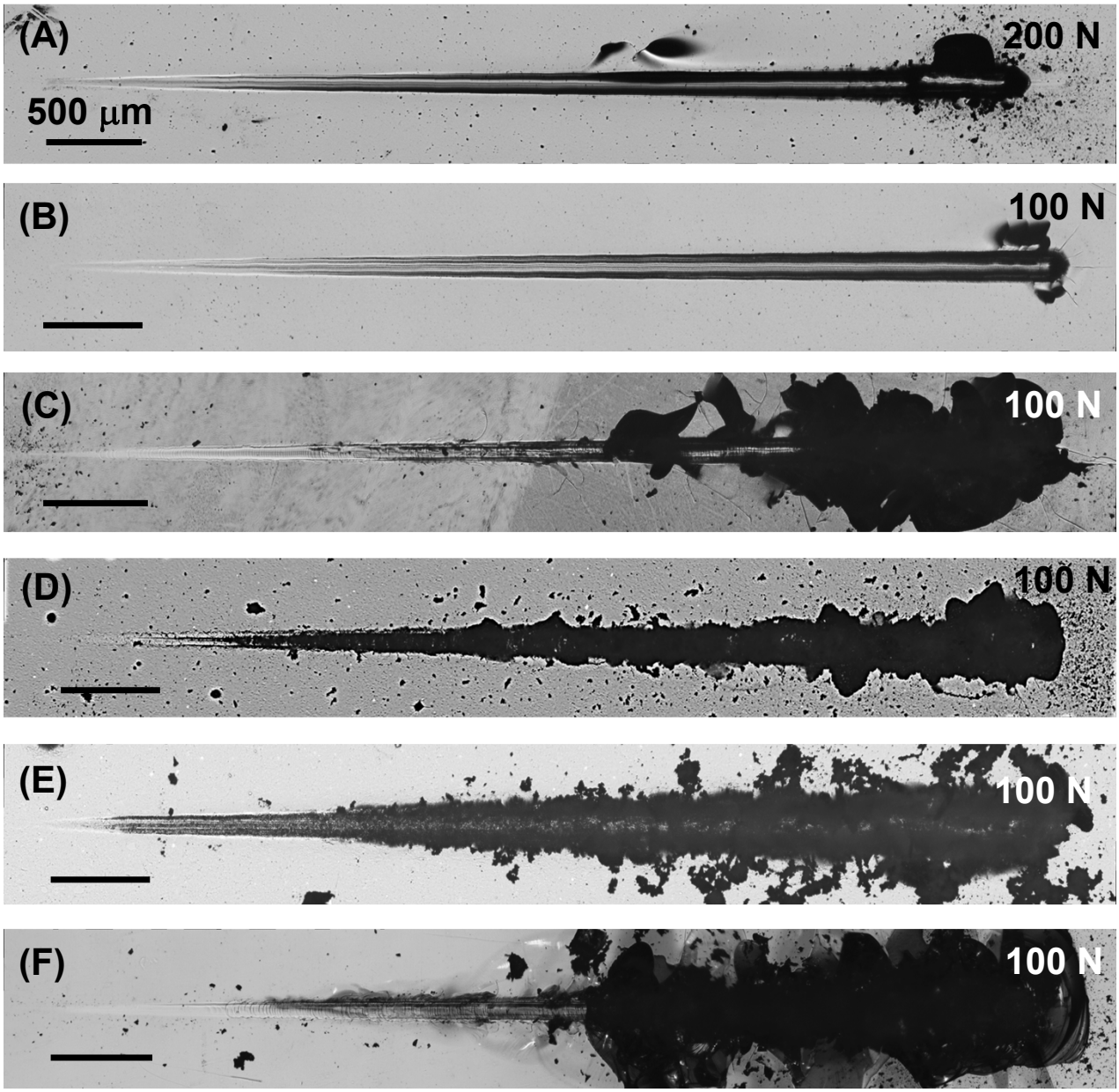
Optical micrographs after indentation tests in axial mode using a Rockwell-C tip of radius 200 μm. In each case, the maximum applied load is indicated in the lower left corner of the image. (A) Zirconia; (B) lithium disilicate; (C) zirconia-reinforced lithium silicate; (D) feldspathic ceramic; (E) Enamic (ceramic-polymer composite); (F) human dental enamel (occlusal surface); and (G) soda-lime glass.

Figure S1



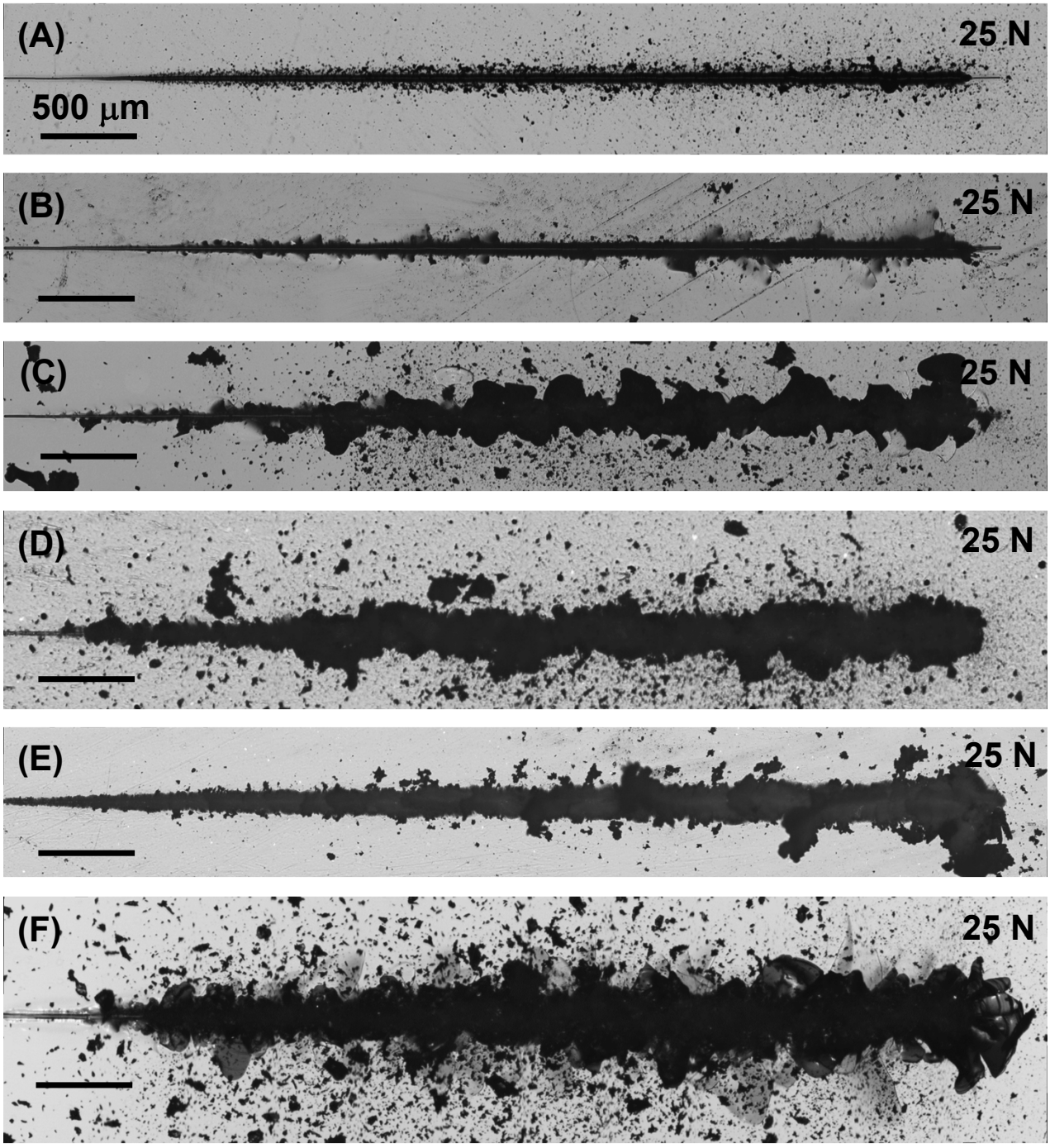
Optical micrographs after indentation tests in axial mode using a Rockwell-C tip of radius 20 μm. Maximum applied load indicated in the lower left corner. (A) Zirconia, with white arrow pointing at small chip particle; (B) lithium disilicate; (C) zirconia-reinforced lithium silicate; (D) feldspathic ceramic; (E) Enamic; (F) human dental enamel (occlusal surface); and (G) soda-lime glass.

Figure S2



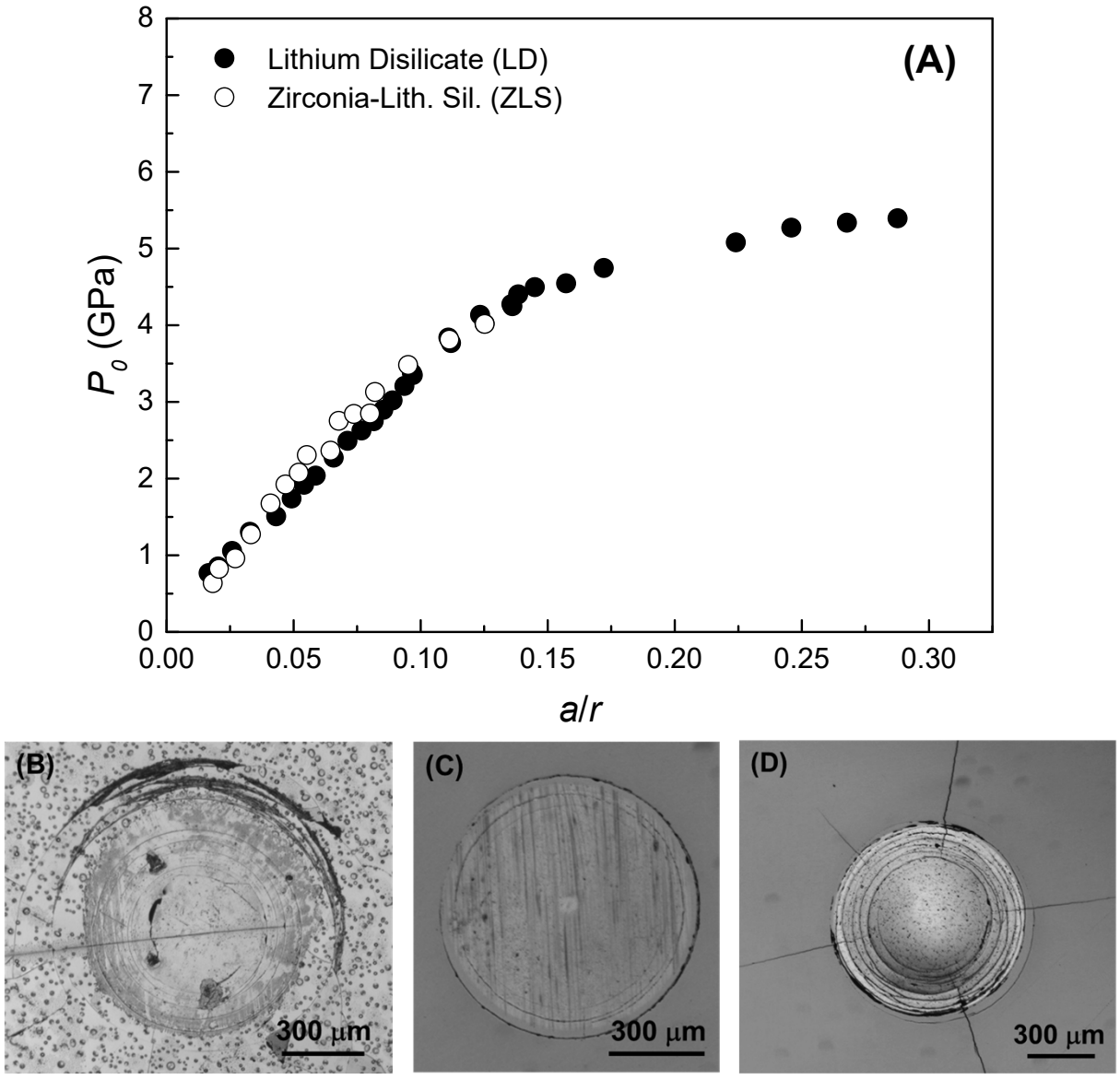
Optical micrographs (panoramic view) after indentation tests in sliding mode using a Rockwell-C tip of radius 200 μm. In each case, the maximum applied normal load is indicated in the upper right corner of the image. (A) Zirconia (at 2.5 mm/min); (B) lithium disilicate; (C) zirconia-reinforced lithium silicate; (D) feldspathic ceramic; (E) Enamic (ceramic-polymer composite); and (F) soda-lime glass.

Figure S3



Optical micrographs (panoramic view) after indentation tests in sliding mode using a Rockwell-C tip of radius 20 μm. In each case, the maximum applied normal load is indicated in the upper right corner of the image. (A) Zirconia; (B) lithium disilicate; (C) zirconia-reinforced lithium silicate; (D) feldspathic ceramic; (E) Enamic (ceramic-polymer composite); and (F) soda-lime glass.

Figure S4



(A) Stress (P_0)-strain (a/r) curves from Hertzian indentation tests on lithium disilicate (LD) and zirconia-reinforced lithium silicate (ZLS) dental materials. (B) Optical micrograph of the scar on ZLS after a Hertzian test at a contact pressure P_0≈4.0 GPa, showing catastrophic, inter-linked cone cracking indicative of a brittle response. (C) Optical micrograph of the scar on LD after a Hertzian test at a contact pressure of P_0≈4.1 GPa, showing contained, non-catastrophic cone-cracking. (D) Optical micrograph of the scar on LD after a Hertzian test at a contact pressure P_0≈5.3 GPa, showing contained cone-cracking and radial cracking indicative of quasi-plastic response.

Figure S5

Material	Axial contact		Sliding contact	
	***r*=200 μm**	***r*=20 μm**	***r*=200 μm**	***r*=20 μm**
Zirconia (Z)	*N.C.*	40 ±2	179 ±4	23 ±4
Lithium disilicate (LD)	*N.C.*	30 ±2	91 ±3	5.2 ±0.4
Zirconia-lith. sil. (ZLS)	115 ±5	10 ±1	54 ±4	2.5 ±0.3
Feldspathic ceramic (F)	145 ±5	9 ±1	56 ±3	3 ±2
Enamic (E)	*N.C.*	60 ±2	93 ±19	12 ±2
Tooth enamel (T)	*N.C.*	*N.C.*	*N.T.*	*N.T.*
Soda-lime glass (G)	90 ±5	12±1	51 ±6	2.2 ±0.5

Loads (N) at which surface chipping was first observed in the dental materials employed in this study under different contact conditions: axial and sliding contacts with Rockwell-C tips of radii (*r*) 200 μm and 20 μm.

N.C. No chipping observed after the maximum load (200 N).
N.T. Not tested, see footnote 1.

Table S1