A 63 YO female sustained a hip fracture in 2010 and was initially treated with gamma nail fixation. In 2011, fixation was converted to THA due to fracture nonunion. At the time of conversion to THA, a short trochanteric cable-grip was placed with two CoCr braided cerclage cables. Less than one year later, the patient presented with acute groin pain and excruciating startup pain. Radiographic evidence of a broken cerclage cable was found and the grip/cables were explanted (Fig. 1). The explanted cable was analyzed with scanning electron microscopy (SEM) to determine the mode of failure. Evidence of “fretting” wear and a fretting-initiated fatigue failure of individual wire strands within the cable bundle were found (Figs. 2-4).

**Fig 1.** Explanted trochanteric grip with failed CoCr cerclage cable

**Fig 2.** SEM image of an individual wire strand component of a braided metal cable at point of cable failure. There is evidence of a fretting-initiated fatigue failure and a final ductile failure of the strand. The fretting wear likely occurred where this strand interacted with its neighboring strand while in service and under load.

**Fig 3.** Tracking marks in cable strand provide evidence of fretting wear (a source of fine metal debris) after less than one year of service. Deformed area is a potential source of larger metal debris that could become a third body abrader.

**Fig 4.** A number of additional fatigue-related cracks (arrows) are found adjacent to the site where a fatigue-initiated failure of the metal cable strand occurred.