Cryopreservation of microsurgically aspirated sperm is common at the time of excurrent duct reconstruction or as a backup for a second cycle of intracytoplasmic sperm injection (ICSI). We identified factors that predict cryosurvival after microsurgical epididymal sperm aspiration (MESA, n=6) and after reconstruction of the excurrent duct (EDR, n=25). We also determined whether pre-freeze (PF) semen characteristics predicted post-thaw (PT) sperm survival. Over the last six months thirty-one patients underwent MESA or EDR and had cryopreserved semen. Semen analysis were done using a computer-assisted semen analyzer; results were verified manually. Nitrogen-vapor technique using TEST-yolk buffer was used for freezing. PF and PT motion characteristics were compared by cause, site, and duration of obstruction and by fluid characteristics. Cryosurvival rate was not associated with the cause or duration of obstruction. Opaque fluid aspirates had better PF (P<0.03) and PT sperm motility than cloudy fluid. Sperm aspirated from the caput had higher PF (P<0.0006) and PT (P<0.05) motility than from corpus and cauda. Sperm from vas deferens had significantly higher PF motility (P<0.0006), PT motility (P<0.05), and PT velocity (P<0.0001) than epididymal specimens. PT total motile sperm count \((10^6/mL)\) was low in all aspirated specimens (caput: 0.1 \pm 0.02; corpus: 0 \pm 0.01; cauda: 0, and vas deferens: 1.4 \pm 3.0). PF motility of less than or equal to 10% predicted 0% PT motility (P<0.03). semen quality is not affected by the cause or years of obstruction. Sperm from the caput yielded better cryosurvival results than sperm from the corpus and cauda; however, cryosurvival of sperm from vas deferens was still better. A PF motility of less than 10% should preclude cryopreservation. Due to a low total motile sperm count, specimens that are preserved should be used for assisted reproduction only by ICSI.