CI: [4.90, 14.95], P = 0.0001) (Figure 1B) following surgery. Similarly, sperm concentration increased by 12.03 X 106/mL (95% CI: [5.71, 18.35], P = 0.0002) (Figure 2A) and motility increased by 11.72% (95% CI: [4.33, 19.12], P = 0.002) (Figure 2B) after high ligation. The change in sperm morphology (3.16%) was statistically significant (95% CI: [0.72, 5.60]; P = 0.01) (Figure 3A). The odds of spontaneous pregnancy after surgical varicocelectomy, as compared to no treatment/medical treatment for clinical varicocele, were significantly different at 2.87 (95% CI: [1.33, 6.20], P = 0.007) (Figure 3B) using a random effects model or 2.63 (95% CI: [1.60, 4.33], P = 0.0001) with a fixed effects model.

Contrary to previous meta-analyses (Nieschlag et al, 1998; Evers et al, 2003), our study suggests that varicocelectomy does indeed have beneficial effects on fertility. Surgery appears to improve semen parameters (count, motility and morphology) in infertile males with palpable varicoceles as well as the spontaneous pregnancy outcomes in their female partners.

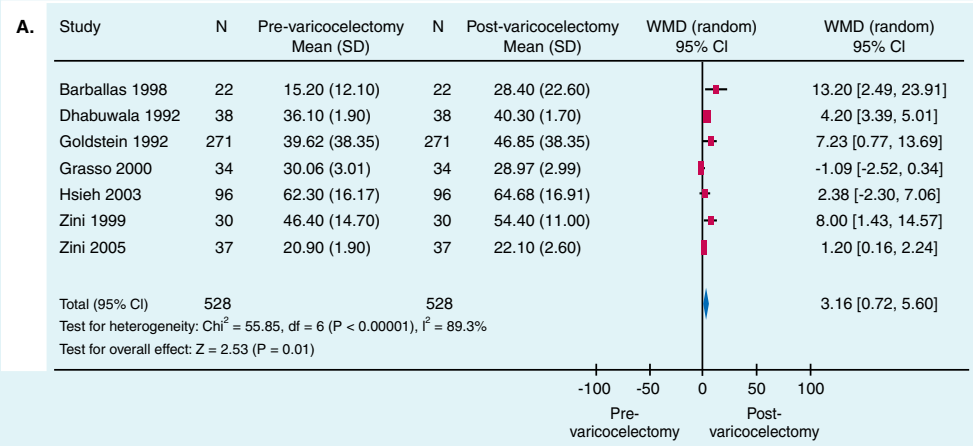

Figure 3A: Postop sperm morphology increased significantly following varicocelectomy.

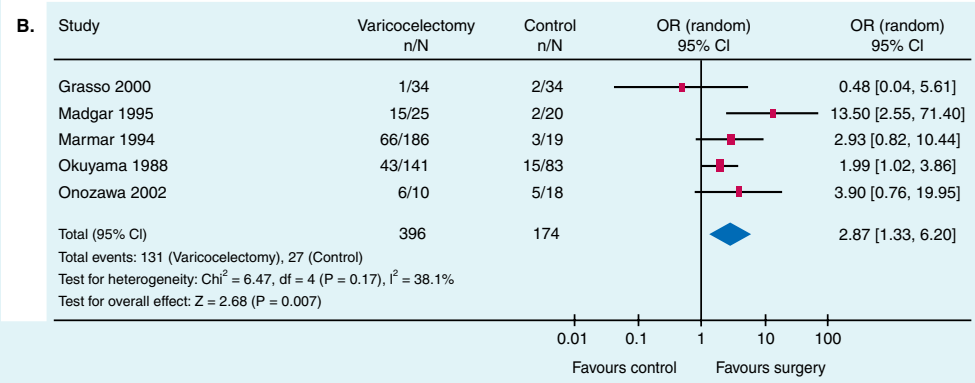

Figure 3B: Effect of varicocelectomy on pregnancy rate using a random effects model showed significant improvement.

OR = odds ratio; n = number of couples achieving pregnancy with male partners diagnosed with clinical varicoceles; N = total number of cases.