Purpose: To assess the role of internal limiting membrane (ILM) peeling in the repair of retinal detachments (RD) due to macular holes (MH) in high myopia. Methods: This retrospective case series includes all patients who underwent vitrectomy for RD due to myopic MH between 2000 and 2009 at our centre. Case records were reviewed for surgical outcomes at 6 months after surgery. Retinal re-attachment and complete anatomical success, defined as retinal re-attachment with MH closure, were assessed. Multivariate logistic regression models including age, sex, ILM peeling, duration of symptoms, spherical equivalent refraction (SE), choice of tamponade, vitrectomy gauge and concurrent scleral buckling were constructed to assess associations with covariates. Results: In total, 103 subjects were analyzed. The majority were female (72 subjects (69.9%)) and the mean age was 57.5±13.7 years. The mean SE was -9.61±6.44D. At 6 months, 88 subjects (85.4%) had retinal re-attachment and complete anatomical success was achieved in 56 subjects (54.3%). In multivariate analyses, increasing age was the only factor predictive of anatomical success (odds ratio 1.051 (95% confidence interval 1.001, 1.103) per year increase; p = 0.045). ILM peeling was not associated with either retinal reattachment or anatomical success. Conclusion: Vitrectomy is effective in the repair of RD due to MH in highly myopic eyes, with retinal re-attachment achieved more frequently than MH closure. ILM peeling is not associated with greater anatomical success.