Varicocele is an abnormal dilation of the pampiniform plexus that constitute the primary drainage of the testis. It is found approximately in 15% of male adolescents with a left sided predominance. Laparoscopic varicocelectomy has been proposed as an alternative surgical procedure for the treatment of varicocele with reported benefits of better convalescence, minimal invasiveness and less analgesic requirement postoperatively. The laparoscopic procedure entailed interruption of the spermatic veins either by clipses and cutting or ligation and later on by power generated ultrasonic or vessel sealing shears. Complications include testicular atrophy and hematoma formation due to either arterial injury or vessel bleeding or clips failure respectively. **Material and methods:** The study was done in El Fayoum University Hospital from November 2011 till November 2012 and it included twenty cases with varicocele. The patients were divided into two groups: The first group (10 patients) was subjected to laparoscopic staple interruption for treatment of varicocele with cutting the gonadal vein or veins in between the clips, the second group (10 patients) was subjected to laparoscopic staple interruption for treatment of varicocele without cutting in between the clips. **Results:** All the procedures in the two groups were completed satisfactorily, with no intraoperative complications. No significant difference was found in the operative time between the two groups (25.5 ±3.12 minutes and 26.2±4.23 minutes for group I and II respectively) (p=0.889). Most patients in the two groups had moderate pain, with no significant difference between the two groups (p=0.801). Hospital stay was not significantly different among the patients of the two study groups (1.7±0.82 days in group I and 1.5±0.68 days in group II) (p=0.870). No post operative complications, only one patient in the 2nd group experienced recurrence symptoms of varicocele. **Conclusion:** Laparoscopic staple interruption for treatment of varicocele without cutting in between the clips is more superior to traditional laparoscopic staple interruption for treatment of varicocele with cutting the gonadal vein or veins in between the clips especially regarding the lower risk to cut the vas deference, spermatic artery or lymphatics, in addition semen analysis shows no difference in the results regarding the increase in spermatic motility or the decrease in abnormal forms, however improvement in spermatic count shows significant difference between the two groups. This work was not enough and furthermore work is needed to demonstrate all the differences between the two groups.