



Background

- Surgical varicocelectomy demonstrates improved pregnancy rates for primary male infertility in patients with palpable varicoceles¹
- This study seeks to evaluate the relationship between patient Body Mass Index (BMI) and changes in total motile sperm counts (TMSC) after varicocelectomy for patients diagnosed with primary male infertility

Methods

- Single institutional retrospective case series from June, 2021 to April, 2023 evaluating patients who underwent microscopic varicocelectomy for primary male infertility
- Pre- and post-varicocelectomy TMSC were collected 3-6 months post-operatively
- BMI was recorded on the day of surgery and grouped by definitions described by the Centers for Disease Control and Prevention (CDC):
 - Healthy: 18.5-24.9 kg/m²
 - Overweight: 25.0-29.9 kg/m²
 - Obese: > 30 kg/m²
- A total of 35 patients were identified with 20 patients meeting inclusion criteria for this study

Results

	Median Age	Median BMI	Bilateral	Median Pre-op TMSC (10 ⁶)	Median Post-Op TMSC (10 ⁶)	Median Difference in TMSC (10 ⁶)
Total	32	26.7	95%	8.8	20	6.6
Healthy (N = 8)	26	23.8	88%	4.2	48.1	16.0
Overweight (N = 7)	33	26.7	100%	14.2	37.8	12.2
Obese (N = 5)	37	33.8	100%	8.8	8.1	1.9

Figure 1: Patient demographics, median, pre- and post TMSC, and difference in TMSC

Median Difference in Total Motile Sperm Count Pre and Post Varicocelectomy

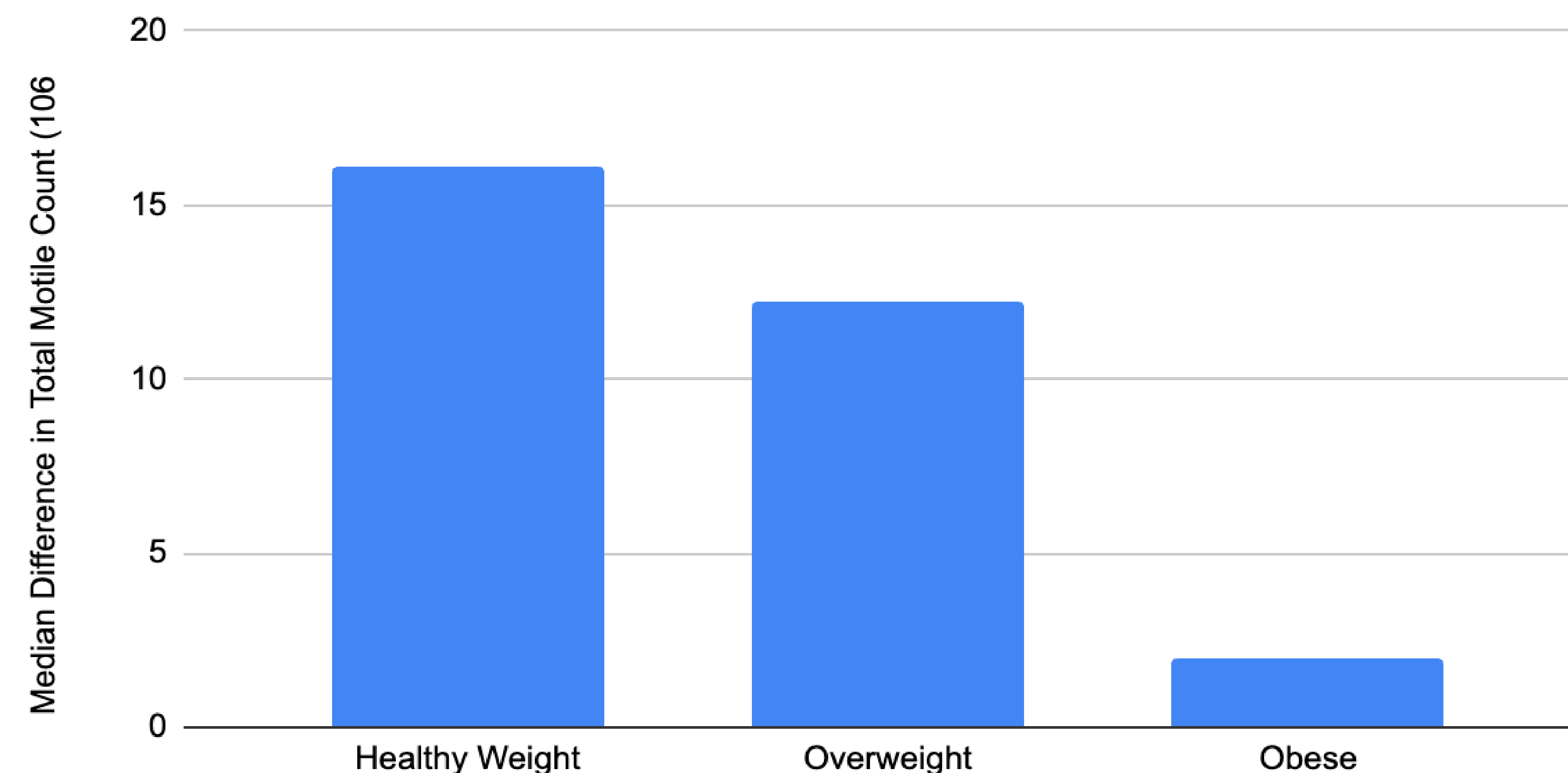


Figure 2: Median Difference in TMSC after varicocelectomy based on BMI

- Median age was 32 years, and BMI was 26.7 kg/m²
- Median ASA was 1.5, 1.0, and 2.0 for healthy, overweight and obese groups
- 95% of patients underwent bilateral varicocelectomy
- 50% underwent a subinguinal surgical approach vs 50% with an inguinal surgical approach
- Median post-operative TMSC for the healthy, overweight, and obese groups were 48.1, 37.8, 8.1, respectively
- Median difference in TMSC for patients in the healthy, overweight, and obese groups were 16.0, 12.2, and 1.9, respectively

Conclusion

- Patients with primary male infertility and elevated BMI (overweight or obese) were found to have less improvement in TMSC after varicocelectomy in comparison to patients with healthy BMI
- Patients with higher BMI should be counseled on the rates of improvement in TMSC after varicocelectomy, emphasizing the importance of a healthy BMI in fertility management

References

1. Wang J, Xia SJ, Liu ZH et al: Inguinal and subinguinal micro-varicocelectomy, the optimal surgical management of varicocele: A meta-analysis. Asian J Androl 2015; 17: 74.