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Comparison of Early Postoperative Results of Robotic and Transsternal Thymectomies

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Objectives: Robotic-assisted thoracoscopic surgery (RATS) is one of the minimally invasive techniques that has been performed for thymectomy operations in recent years. Compared with conventional open surgery, minimally invasive surgery decreases postoperative pain, hospital stay and leads to a faster recovery. The aim of this study was to compare the early postoperative results of transsternal and robotic thymectomies.

Methods: Twenty-eight patients who underwent thymectomy in 2018 were included in the study. Twelve patients were operated by robotic method and 16 by transsternal method. Age, gender, presence of myasthenia gravis, operation duration, preparation time of robotic cases, chest tube removal time and amount of drainage, postoperative complications, cooperation rate, postoperative bleeding and length of stay in intensive care unit and hospital were examined retrospectively.

Results: Of the 28 patients included in our study, 18 were female and 10 were male. The median age was 31.50 [28.25-40.00] for robotic thymectomy cases, and 41.50 [37.35-45.75] for transsternal thymectomy cases. The median value of the operation times was 140 [105-215] minutes in robotic thymectomy and 135 [100-150] minutes in transsternal timectomy. There was no significant difference in operation time between the two groups. The mean robotic set-up and selective intubation time was 45 minutes. All transsternal thymectomies stayed in the intensive care unit for one day. Robotic thymectomies were not taken into intensive care unit. Only one case of transsternal thymectomy remained in the intensive care unit for two days due to postoperative atrial fibrillation and it was the only complication that occured. The median time of chest tube removal time was 1.50 [1.00-2.00] days in robotic thymectomy and 2.50 [1.00-3.75] days in transsternal thymectomy. However, there is no statistically significant difference between them (p=0.082). The median drainage amount was 155 [35.00-252.50] ml in robotic thymectomy and 325 [177.50-598.70] ml in transsternal thymectomy. The amount of drainage was significantly lower in robotic thymectomy cases (p=0.006). The median lenght of stay in hospital was 4.00 [4.00-5.00] days in robotic thymectomy and 6.50 [6.00-7.75] days in transsternal thymectomy. Hospitalization time was significantly shorter in robotic thymectomy cases (p<0.001).

Conclusion: Compared to the transsternal approach, the robotic surgical method lead to less drainage and shorter lenght of stay in hospital. There is no difference between the two surgical methods in terms of operative times. To sum up, robotic surgery is a feasible and safe minimally invasive surgical technique currently used for thymectomy and provides better postoperative outcomes compared to transsternal approach.

Keywords: Robotic thymectomy, transsternal thymectomy, postoperative results