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ABSTRACT

A comparative study of survival rates between auto and surgically splenectomized patients with sickle cell disease

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Background and aim: One of the common organs early affected in sickle cell disease (SCD) is the spleen, which has a vital role in normal homeostasis. In a significant number of patients with SCD auto auto-splenectomy occurs in childhood and may increase the risk of SCD-related complications later in life. To date, long-term survival rates among auto-splenectomized patients with SCD are still underestimated, especially in the Omani population. Therefore, this study aims to evaluate the effect of auto-splenectomy on overall survival rates over the period of ten years, and to compare these survival rates to surgically splenectomies patients with SCD.

Patients and Methods: This was a retrospective study, in which auto-splenectomies patients with SCD were enrolled from 2009 to 2019. Data were collected from medical records using the Track Care system, at baseline and during the follow-up visits one-, five-, and ten-year post auto-splenectomy. Kaplan and Meier curves, t-test, and chi-square test were used to assess associations among study parameters.

Results: Based on the clinical notes and imaging findings, 189 auto-splenectomies patients were identified and followed prospectively for a period of ten years. The estimated age at auto-splenectomy was 22 ± 5 years, ranging from 6 to 25 years. Five death cases (2.6%) were documented during the ten-year follow-up period in the patient cohort. The overall survival rates at one-, five-, and ten-year post-auto splenectomy were 98.9%, 97.5%, and 95.7%, respectively.

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There were no significant differences in survival rates between auto- and surgically-splenectomies patients at one-, five-, and ten-year follow-up periods with p-values of 0.128, 0.158, and 0.319, respectively. Similarly, no statistically significant differences in SCD-related complication rates were noticed between auto- and surgically-splenectomies patients, except for vaso-occlusive crisis (VOC) rate at one-year (P= 0.0004).

Conclusion: Regardless of the spleen status, the survival rates over one-, five-, and ten-year follow-up periods are comparable between auto- and surgically-splenectomies patients with SCD. Except for VOC events, the SCD-related disease complications were similar in both groups. Further studies are needed to explore the hematological and biochemical parameters along with the scoring system, to identify early predictive markers for auto-splenectomy among Omani patients with SCD.

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