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Micro invasive papillary thyroid lesion in a post living donor liver transplant patient: A case report

Khaled Abdel Wahab, Essam Attia, Mohammad Arafa, Mohamed El Sorogy, Mohamed Abdel Wahab

ABSTRACT

Introduction: Liver transplant recipients are at increased risk of developing de novo malignancies. Skin cancers and lymphoma are common in adult transplant recipients, while post-transplant lymphoproliferative disorder (PTLD) is the most common concern in pediatric transplant recipients. De novo malignancy is a well-recognized complication of solid organ transplantation and associated immunosuppression. The development of such malignancies can be caused by a multifactorial combination of individual and regional predispositions to malignancy, pretransplantation disease states, recipient viral status, and the use and intensity of various immunosuppressive regimens to maintain allografts.
Case Report: This report describes a papillary microinvasion of the thyroid in an adult Egyptian male following liver transplantation and declares the need for a high level of suspicion and careful investigation into any abnormal lesion in the long-term follow-up of solid organ transplant patients.
Conclusion: Care should be taken towards any significant symptom or sign suspicious for malignancy for post-transplant patients. The idea of having a routine screening program to detect de novo tumors for those patients should be discussed more.

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ABSTRACT

Introduction: Liver transplant recipients are at increased risk of developing de novo malignancies. Skin cancers and lymphoma are common in adult transplant recipients, while post-transplant lymphoproliferative disorder (PTLD) is the most common concern in pediatric transplant recipients. De novo malignancy is a well-recognized complication of solid organ transplantation and associated immunosuppression. The development of such malignancies can be caused by a multifactorial combination of individual and regional predispositions to malignancy, pretransplantation disease states, recipient viral status, and the use and intensity of various immunosuppressive regimens to maintain allografts. Case Report: This report describes a papillary microinvasion of the thyroid in an adult Egyptian male following liver transplantation and declares the need for a high level of suspicion and careful investigation into any abnormal lesion in the long-term follow-up of solid organ transplant patients. Conclusion: Care should be taken towards any significant symptom or sign suspicious for malignancy for post-transplant patients. The idea of having a routine screening program to detect de novo tumors for those patients should be discussed more.

Keywords: De novo malignancy, Immunosuppressive therapy, Liver transplant, Thyroid lesion

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INTRODUCTION

Liver transplant recipients are at increased risk of developing de novo malignancies compared to the general population [1–3]. The reported incidence rates range between 3% and 15%, twice that of the general population [4–5].

Skin cancers and lymphoma are common in adult transplant recipients, while post-transplant lymphoproliferative disorder (PTLD) is the most common concern in pediatric transplant recipients [6].

This report describes a papillary micro invasion of the thyroid in an adult male patient following liver transplantation and declares the need for a high level of suspicion and careful investigation into any abnormal lesion in the long-term follow-up of solid organ transplant patients.

CASE REPORT

A 48-year-old Egyptian male had successfully undergone liver transplantation 18 months earlier for hepatocellular carcinoma on top of liver cirrhosis. He had a smooth postoperative period. Then, he used to take cyclosporine and mycophenolate sodium as immunosuppressive therapy.

Eighteen months post-transplant, the patient came with a thyroid nodule that was discovered accidentally after doing a neck ultrasound. There was no prior history of irradiation exposure or any family history of thyroid disease. There was no associated lymphadenopathy, and systemic examination did not reveal any significant findings. He was euthyroid with normal thyroid function.

Neck ultrasound revealed asymmetrically enlarged both thyroid lobes showing foci of calcification and increased perinodular vascularity with the largest nodule was on the left side measuring 1.8x1.2 cm.

Although the initial fine needle aspiration cytology (FNAC) results were inconclusive (colloid nodule with secondary hemorrhage), we decided to perform total thyroidectomy due to the sonographic suspicious criteria. Total thyroidectomy confirmed the diagnosis of micro invasive papillary carcinoma with no capsular and vascular invasion.

Grossly, the lesion appeared as solid firm whitish nodule of about 1.5 cm in diameter. Microscopically, it showed the typical features of papillary carcinoma of the thyroid. There were papillae showing complexity and branching. The papillae were lined by cuboidal cells with stratification. The nuclear features were mostly apparent in the form of ground glass (optically clear), overlapping and grooving (Figures 1 and 2)

The tumor was T1N0M0 on TNM staging with no lymph node invasion or distant metastases. Post-operative, suppressive dose of eltroxin was prescribed for the patient with close follow-up.

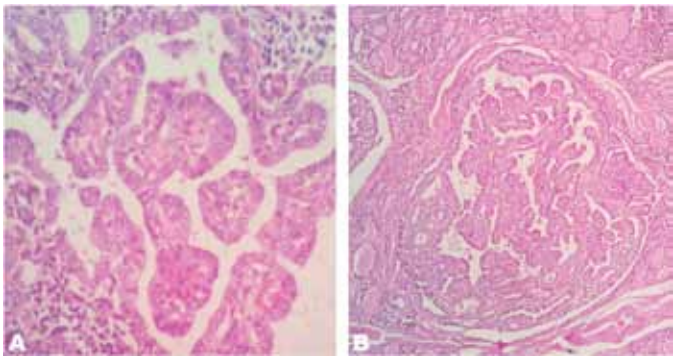

Figure 1 (A, B): Microscopic picture of the micro invasive papillary thyroid lesion.

DISCUSSION

Acquired immunodeficiency conditions are always associated with an increased risk for de novo malignancy. Organ transplantation is considered as an induced state of immunosuppression and, is commonly associated with higher probability for developing neoplasms [7].

De novo malignancy is a well-recognized complication of solid organ transplantation and associated immunosuppression. The risk of developing de novo malignancy after liver transplantation is about 1% per year, but the incidence varies between 3% and 15%, rates that are far greater than those in the general population [1–3].

The development of such malignancies can be caused by a multifactorial combination of individual and regional predispositions to malignancy, pretransplantation disease states, recipient viral status, the use and intensity of various immunosuppressive regimens to maintain allografts [8].

This complication is a major cause of late death in liver transplant recipients, responsible for 25% of the deaths occurring in patients who have survived more than three years post-transplantation [9].

The improvement in immunosuppression and better management of transplanted patients has led to a marked increase in post-LT survival. However, two main pitfalls exist: recurrence of HCV and the long-term side effects of immunosuppression [10].

Protocol for immunosuppressive drugs has changed in the past decades. Overall, the triple therapy for immunosuppression was the standard of care from 1991 to 1995 (cyclosporine, azathioprine and steroids). After 1995, significant changes were developed, consisting primarily in the use of more potent agents [mofetil mycophenolate (MMF), tacrolimus, sirolimus, anti-IL2 receptor antibodies] and the earlier stoppage of second line drugs, such as steroids [7].

Based on the recent introduction of newer and more potent immunosuppressive drugs in the LT arena, Benlloch et al. hypothesized, first, that the number of de novo tumors would increase in recent years; and second, that these tumors may follow a more aggressive behavior [7].

Schmilovitz et al. in their study failed to observe a correlation between tumor development and the type of immunosuppression, the occurrence of rejection episodes, or OKT3 use [11].

Accurate data such as the median interval between solid organ transplantation and the occurrence of the thyroid carcinoma, age range and sex ratio were not discussed in literature.

The patient was commenced on suppressive thyroxine supplements and thyroglobulin levels were monitored to detect recurrent or persistent disease following total thyroidectomy.

CONCLUSION

Care should be taken towards any significant symptom or sign suspicious for malignancy for post-transplant

patients. The idea of having a routine screening program to detect de novo tumors for those patients should be discussed more.

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Author Contributions

Khaled Abdel Wahab – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Essam Attia – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Mohammad Arafa – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Mohamed El Sorogy – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Mohamed Abdel Wahab – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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