Posttransplant Lymphoproliferative Disorder of Pancreas

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Introduction

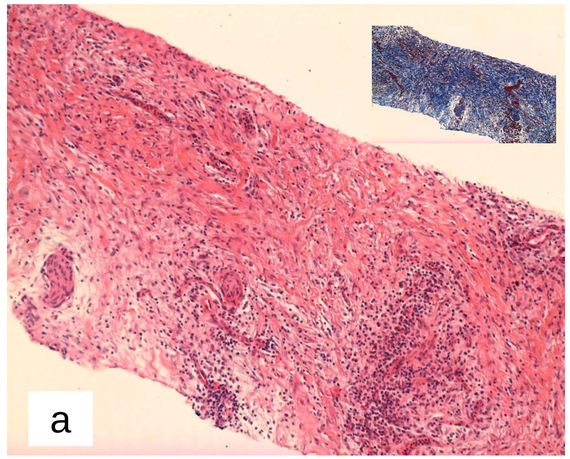
Posttransplant lymphoproliferative disorder (PTLD) is defined as lymphoid proliferations developing in solid organ or hematopoietic stem cell recipients, strongly associated with EBV infection. This disease is more commonly seen in children, with an overall frequency of 2-10% (frequency varies by tissue type); roughly a quarter of cases involve the transplanted organ. PTLD can manifest in nonspecific ways and in clinically unsuspected patients, rendering pathological examination as the sole diagnostic tool; however, due to heterogeneous morphology of this lesion accompanied by necrosis, biopsies may miss the diagnostic areas. We present a case of a 45-year-old male who received pancreas following a renal transplant. He underwent pancreatic biopsy and later pancreatectomy for suspected allograft pancreatitis, of note was massive enlargement of the pancreatic head in a short interval. A search in Pubmed reveals one case report of pancreatic PTLD with similar presentation; features complicating the diagnosis in these two cases will be discussed further in the text.

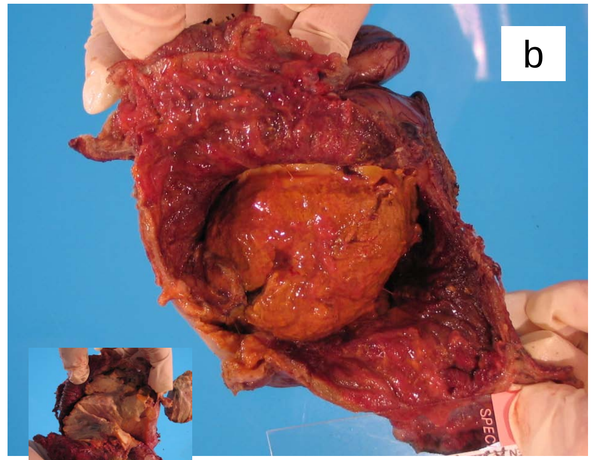
Materials/Methods

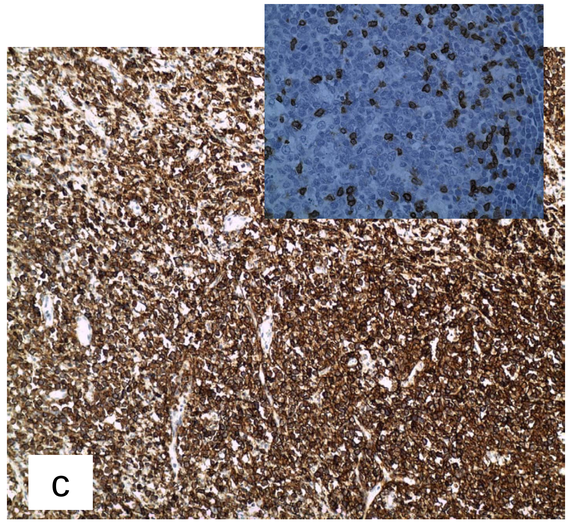
From our current case, investigated material includes: H&E-stained slides from a 3-month-prior pancreatic biopsy and a recent pancreatic graft explant and renal allograft biopsy, in addition to Immunohistochemistry stains for B-cell, T-cell, and Epstein-Barr virus (EBV) markers and polymerase chain reaction (PCR) screening performed on explant tissue. Incorporated material from the literature includes a case report on misleading presentation and a small study on radiomorphological features of pancreatic PTLD.

Results

Initial biopsy from the pancreatic tail showed acute interstitial pancreatitis with severe chronic rejection (grade 3/3) based on the presence of fibrosis and loss of exocrine parenchyma. Microscopic evaluation of the pancreatic head showed a heterogeneous lymphocytic population surrounded by necrosis. The lymphocytic aggregates included a predominant B-cell (CD20-positive) proliferation, corresponding to large atypical cells on H&E stain, and a secondary, morphologically normal T-cell (CD3-positive) population. There was strong positivity in atypical lymphocytes with EBER-ISH stain. PCR screening showed a monoclonal B-cell population, supporting the diagnosis of polymorphic PTLD. Subsequent renal allograft biopsy showed nonspecific findings but no features suggestive of rejection or PTLD.







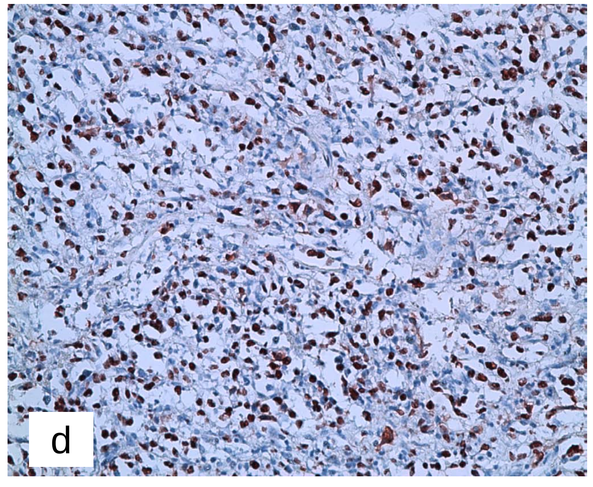


Figure a: pancreas tail biopsy with evidence of acute pancreatitis and severe chronic rejection, inset: trichrome stain highlighting extensive fibrosis; Figure b and inset: pancreas explant with globular, necrotic pancreatic head (7.0 cm in diameter); Figure c: diffuse B-cell population positive for B cell marker CD20, inset: only scattered T-cells positive for CD3; Figure d: positivity of lymphocytes for EBV with EBER-ISH.

Discussion

Pancreatic PTLD is a rare, serious complication of transplanted organs which can remain elusive. Our patient had a pre-operative diagnosis of acute pancreatitis with significant organomegaly. Of note was rapid progression of PTLD along a significant enlargement of pancreatic head. Although diffuse organomegaly is reported as a common presentation of this disease, review of the literature also reveals rare cases with focal enlargement within the pancreas. Further investigation into various morphological appearance of this entity was limited due to rarity of reports. A feature worthy of further discussion is the adequacy of core biopsies since pancreatic PTLD may manifest focally. As in our case and also in a reported case by Dyckmans *et. al.* , core biopsies submitted from the pancreatic head were non-diagnostic, due to overwhelming necrosis associated with infarct. In the current case, the diagnosis of allograft pancreatitis with chronic rejection was rendered on biopsies form the pancreatic tail region, an area with a more normal gross configuration. On the contrary, upon examination of the explant, PTLD was evidenced predominantly in the pancreatic head region. Lack of representativeness of the biopsied tissue in these two cases may have prevented an earlier diagnosis of the disease; on the other hand, PTLD may develop as a rapidly progressive disorder. This matter is of diagnostic significance and is worthy of further investigation.

References

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