The Case of the Disappearing Ducts: Hodgkin's Lymphoma presenting with Vanishing Bile Duct Syndrome

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BACKGROUND

- Classical Hodgkin's lymphoma (cHL) can cause hepatic dysfunction through a **variety of mechanisms**
- These include:
  - direct infiltration
  - viral reactivation
  - bile duct obstruction
  - drug induced injury
  - hemophagocytic proliferation
  - paraneoplastic processes
- Vanishing Bile Duct Syndrome (VBDS) is a rare acquired process that can be paraneoplastic in which there is **destruction of intrahepatic bile ducts** leading to cholestasis.
- It is very rare, with only about 30 cases clearly documented in the literature since 1993

THE CASE

• A previously healthy 24-year-old who presented with 1 week of abdominal pain, nausea, and yellow skin as well as 6 months of night sweats and WL.

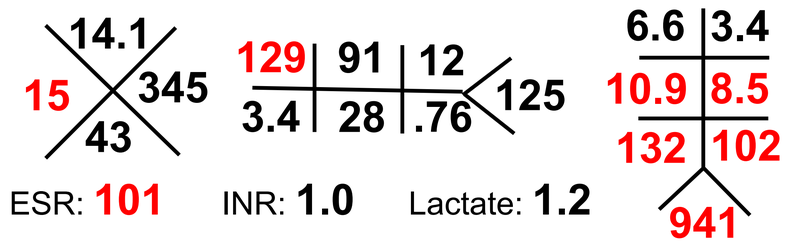
•His physical exam on presentation was most notable for marked jaundice/scleral icterus and **diffuse cervical and inguinal lymphadenopathy**

• Initial laboratory work up revealed was most notable for a cholestatic liver injury with a leukocytosis and elevated inflammatory markers

• PET CT scan revealed diffuse increased FDG uptake from many LNs and a biopsy showed **Classical Hodgkin's lymphoma**

•RUQUS and MRCP showed normal gall bladder size and **no sign of obstruction** and liver biopsy ultimately confirmed VBDS

THE CASE CONTINUED

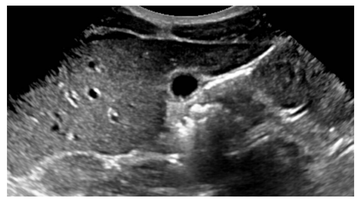


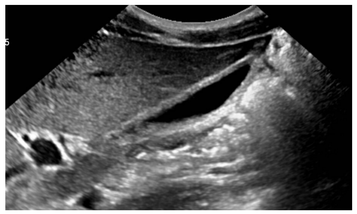
ESR: **101** INR: **1.0** Lactate: **1.2**

Uric Acid: **5.9** Lipase: **61**

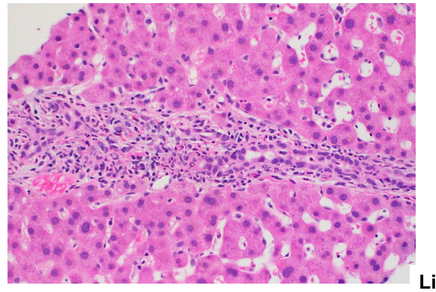
Hepatitis panel, ANA, AMA, A1AT, Anti-Sm muscle all unremarkable

MRI showing HSM without gallbladder distention or obstruction.

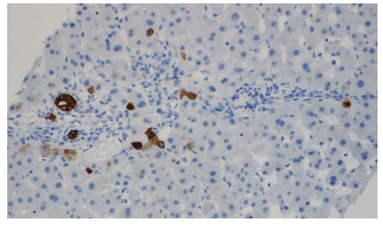




RUQUS without GB distention or obstruction.



Liver biopsy, acute portal inflammation



Liver biopsy, CK7 stain showing disrupted small bile duct and small duct proliferation

DISCUSSION

• VBDS as a cause if liver injury in a patient with lymphoma is a diagnosis of exclusion based on characteristic liver biopsy findings **after other possible causes of liver injury are ruled out**

• A thorough medication review (DILI), imaging evaluation (for obstruction) and laboratory evaluation (for metabolic/viral) should be conducted prior to or concomitant with liver biopsy

•This is rare, with 29 prior cases seen in the literature since 1993 associated with classic Hodgkin's Lymphoma.

•Only 10 of these cases (34%) resulted in resolution with successful treatment of the lymphoma.

•If this diagnosis is made after a thorough evaluation, early and aggressive treatment of underlying malignancy is recommended in conjunction with symptomatic treatment of cholestasis

• There may need to be consideration for liver transplant prior to aggressive chemotherapy

CONCLUSIONS

• There are many potential causes of liver dysfunction in any patient with confirmed or suspected malignancy and broad differential is appropriate for initial evaluation.

•Early recognition and treatment VBDS is important as it may affect planning and early aggressive management of underlying process especially in the case of malignancy

REFERENCES

1. Bakhit, M., McCarty, T. R., Park, S., Njei, B., Cho, M., Karagozian, R., & Liapakis, A. (2017). Vanishing bile duct syndrome in Hodgkin's lymphoma: a case report and literature review. World Journal of Gastroenterology, 23(2), 366.
2. Fong, M., Boyle, S., & Gutta, N. (2019). Brentuximab vedotin in combination with sequential procarbazine, cyclophosphamide and prednisolone for the management of Hodgkin's lymphoma-associated vanishing bile duct syndrome (VBDS) with severe obstructive liver failure. BMJ Case Reports CP, 12(2), bcr-2018.
3. Rota Scalabrini, D., Caravelli, D., Carnevale Schianca, F., D'Ambrosio, L., Tolomeo, F., Boccone, P., ... & Grignani, G. (2014). Complete remission of paraneoplastic vanishing bile duct syndrome after the successful treatment of Hodgkin's lymphoma: a case report and review of the literature. BMC Research Notes, 7(1), 1-6.
4. Barta, S. K., Yahalom, J., Shia, J., & Hamlin, P. A. (2006). Idiopathic cholestasis as a paraneoplastic phenomenon in Hodgkin's lymphoma. Clinical Lymphoma and Myeloma, 7(1), 77-82.
5. Papakonstantinou, I., Kosmidou, M., Papathanasiou, K., Koumpis, E., Kapsali, E., Milionis, H., ... & Hatzimichael, E. (2021). Paraneoplastic intrahepatic cholestasis in supradiaphragmatic classical Hodgkin lymphoma successfully treated with Brentuximab Vedotin: A case report and review of the literature. in vivo, 35(4), 1951-1957.

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