

Disseminated Herpes Simplex: A Diagnostic Enigma

INTRODUCTION

Disseminated Herpes Simplex Virus (HSV) is rare but is associated with up to 50% mortality, especially in immunocompromised patients and pregnant women in whom the diagnosis is often missed. In pregnant women, it can cause fulminant liver failure and can lead to fetal demise in some cases. We describe a case of disseminated HSV in a pregnant woman with no known active disease prior to pregnancy.

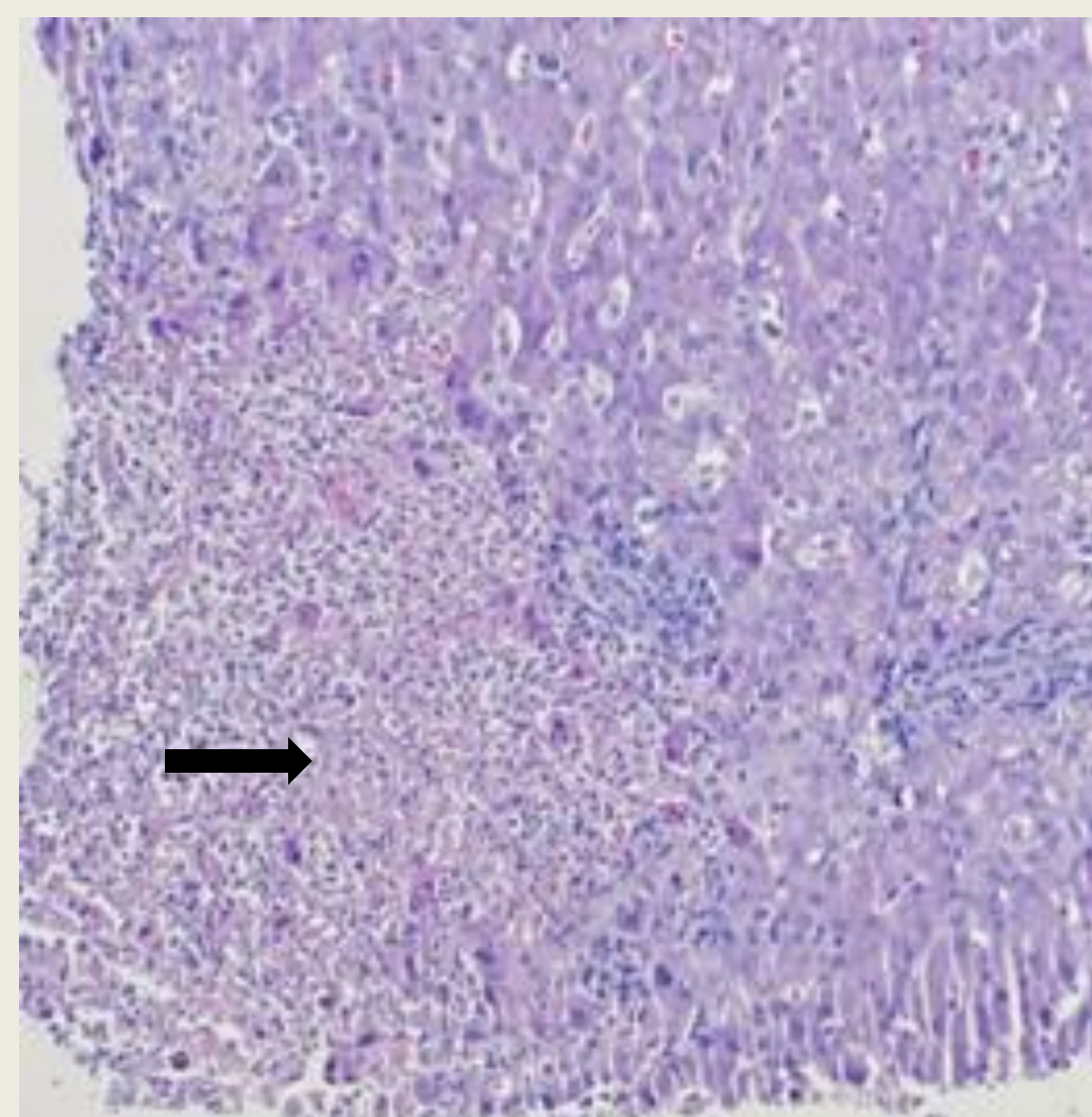


Fig 1. Necrosis & Inflammation (arrow)

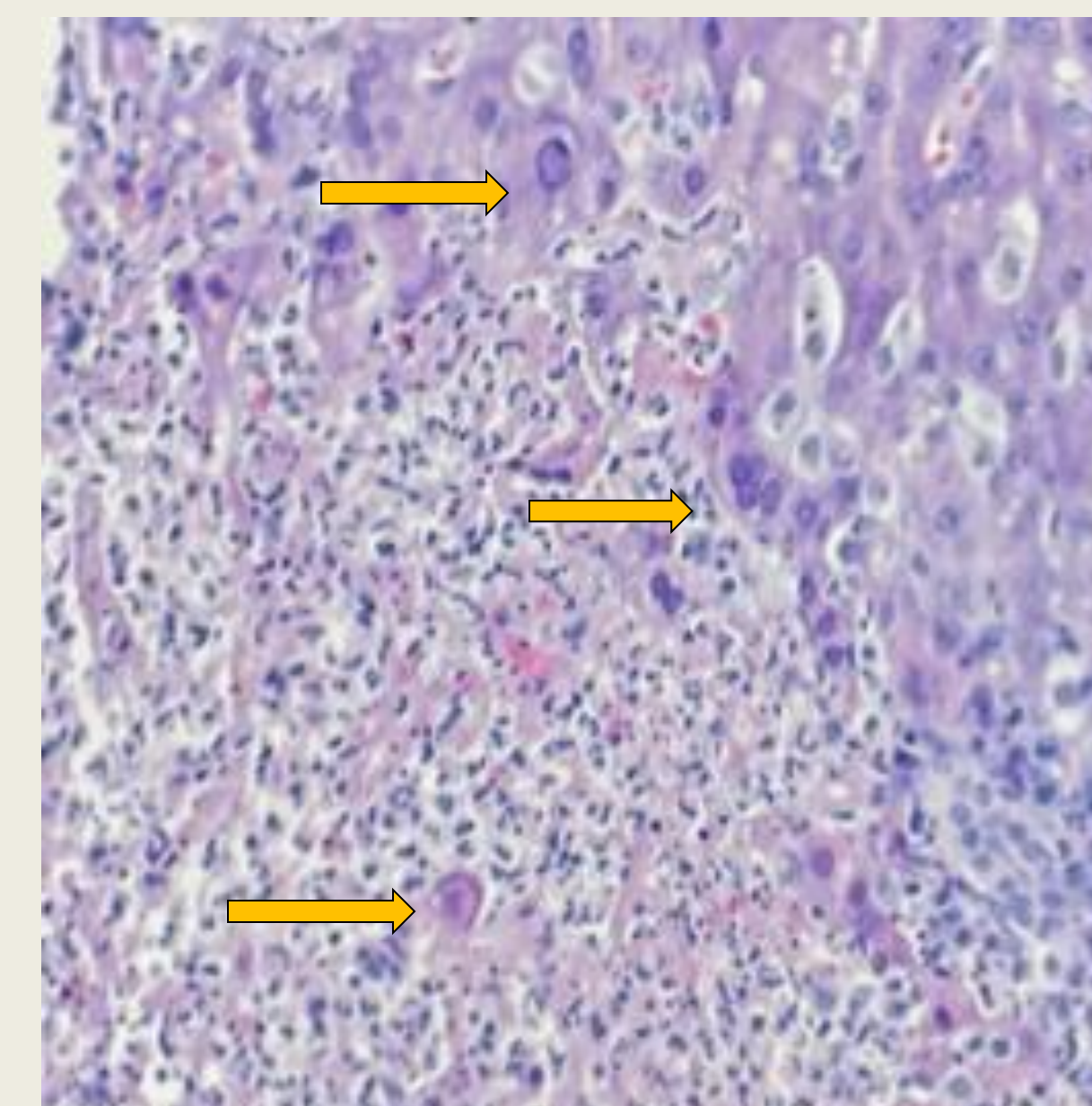


Fig 2. HSV Infected Hepatocytes (arrows)

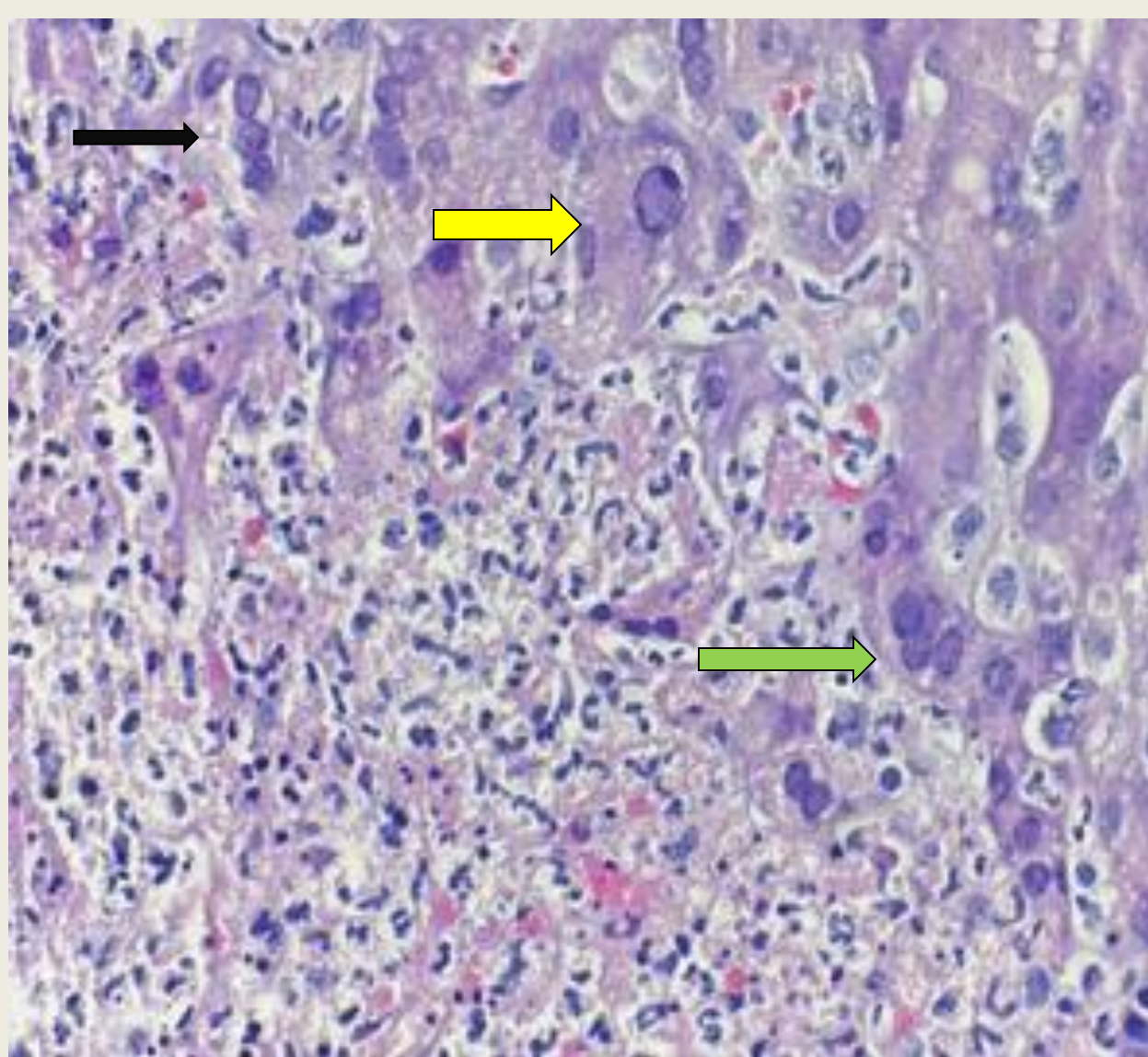
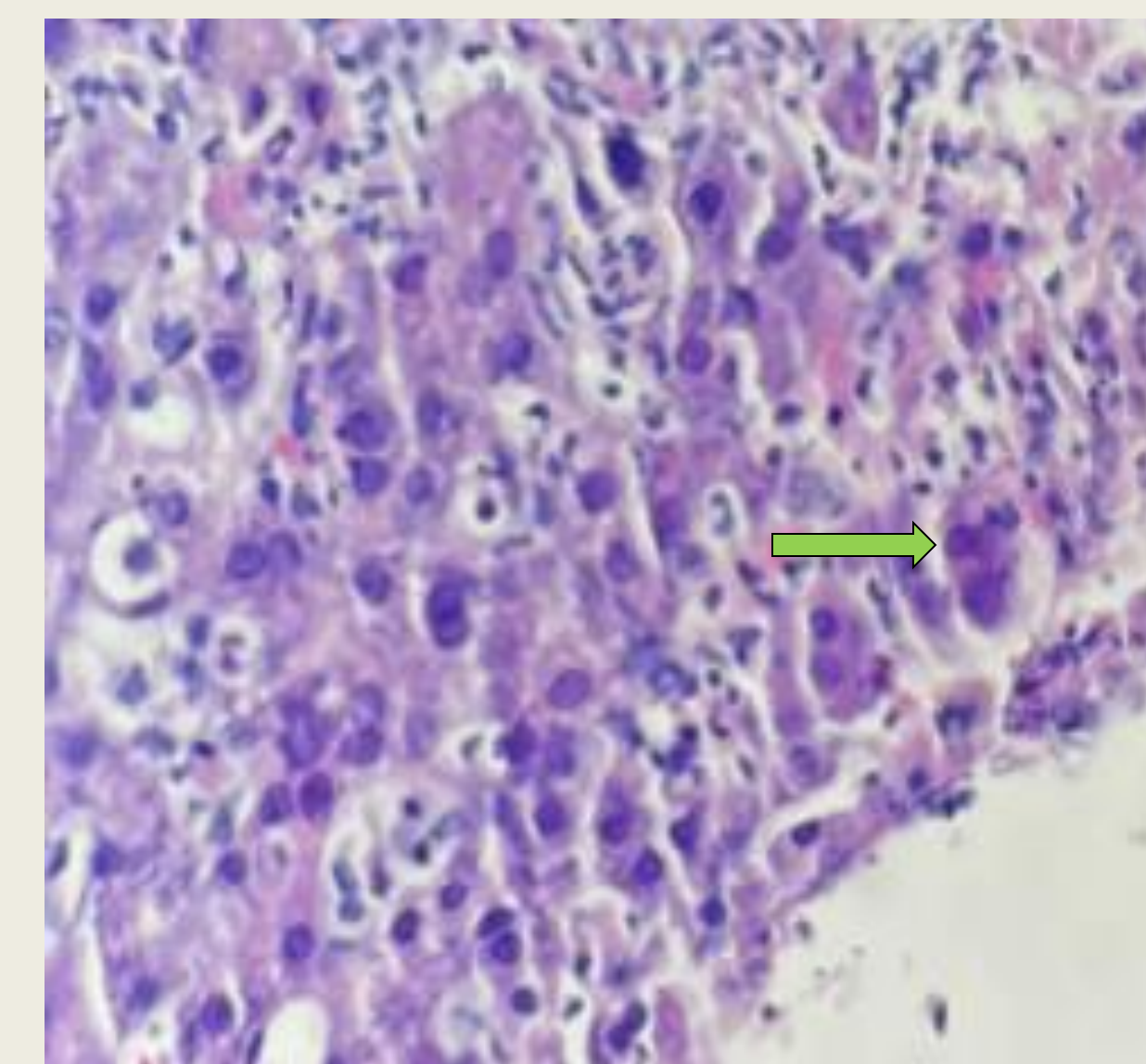


Fig 3,4. Nuclear multinucleation (black arrow), nuclear margination (yellow arrow), nuclear molding (green arrow)



CASE REPORT

A 28-year-old healthy female presented at 26 weeks gestation with fever, chills and back pain.

- Initial labs were concerning for pyelonephritis and antibiotics were initiated.
- Despite broad spectrum antibiotics, she had persistent fever.
- HIV, CMV, EBV, Toxoplasma, Syphilis were all negative.
- Liver function tests started to increase with AST 384 U/L and ALT 220 U/L. Viral hepatitis serologies and due to her recent travel to Lyme endemic area, arbovirus serology was tested, which were all negative.
- She subsequently developed thrombocytopenia and worsening hypertension raising concern for HELLP syndrome and underwent emergent cesarean section.
- Postpartum course was complicated by persistent fevers and concern for chorioamnionitis; however, she continued to have worsening transaminases (AST 2632, ALT 1000).
- Computed tomography abdomen found numerous liver lesions concerning for abscesses or metastases. (Fig 5) Liver biopsy found microvesicular steatosis consistent with HELLP syndrome.
- She then developed worsening thrombocytopenia, coagulopathy (INR 2) and rising LDH, which was concerning for disseminated intravascular coagulation, for which she underwent plasmapheresis.
- Meanwhile, her HSV PCR serology returned positive for HSV-2 and she was started on acyclovir just in time.
- Final report of the liver biopsy was also consistent with viral inclusion bodies and positive IHC staining for HSV-2. (Fig. 1-6)
- Her course was complicated by encephalopathy.
- Lumbar puncture returned positive for HSV confirming disseminated HSV.
- Encephalopathy, transaminases and coagulopathy eventually improved with treatment, and she was able to be discharged on a 21-day course of acyclovir.
- Her symptoms had resolved on follow up visit and she had no further complaints.

DISCUSSION

Disseminated HSV has a high mortality in pregnancy but can be missed due to the rarity of the condition. Early diagnosis and administration of acyclovir decreases mortality. A high index of suspicion is necessary, and it should remain in the differential diagnosis in pregnant and postpartum patients with acute hepatitis and even considered in patients with elevated transaminases without any overt history or skin lesions concerning for HSV as in this patient.



Fig 5. CT abdomen showing multifocal liver lesions

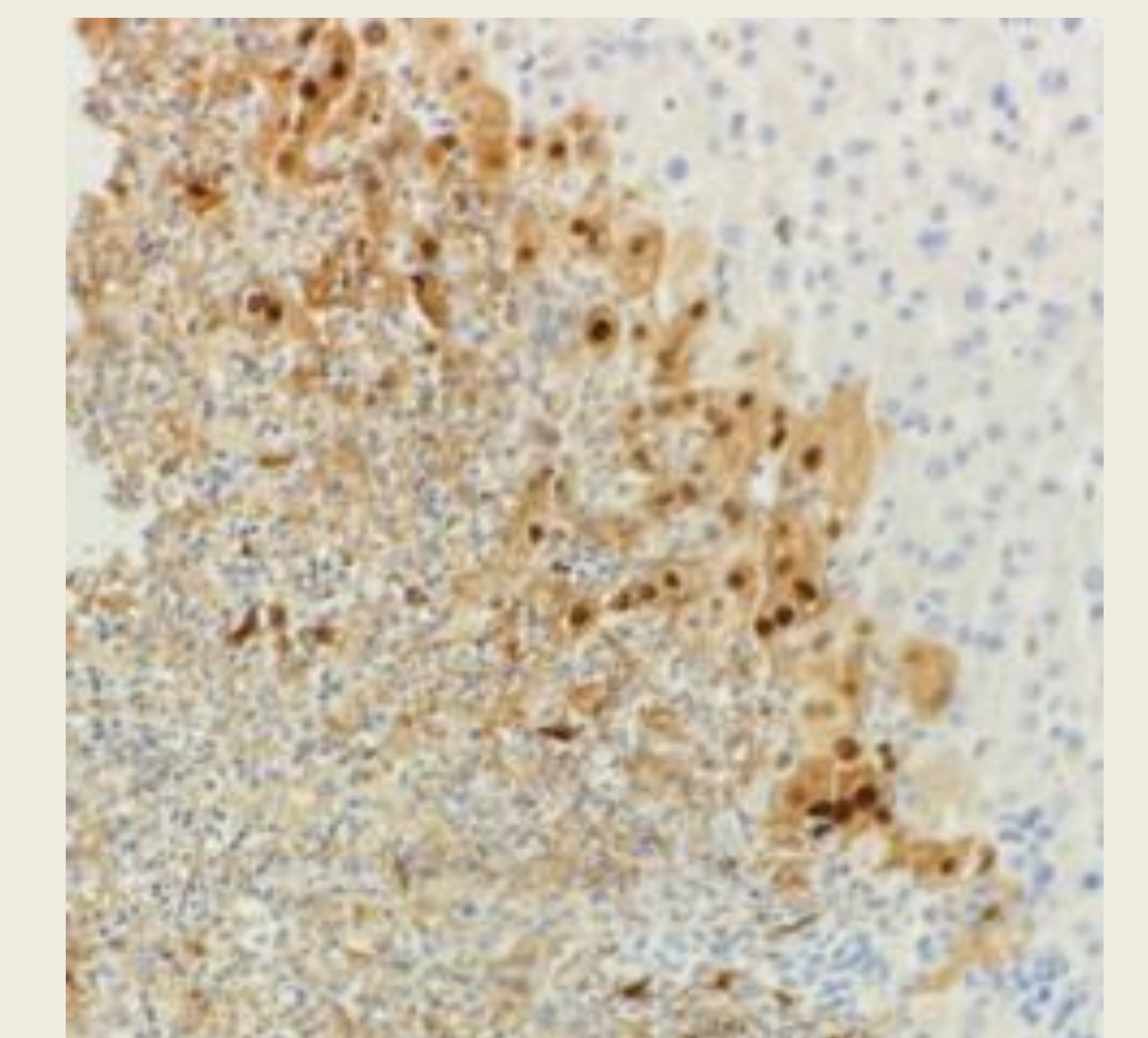


Fig 6. Immunohistochemistry (IHC) staining positive for HSV-2

REFERENCES

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2. Magawa S, Tanaka H, Furuhashi F, Maki S, Nii M, Toriyabe K, Ikeda T. A literature review of herpes simplex virus hepatitis in pregnancy. *J Matern Fetal Neonatal Med.* 2020 May;33(10):1774-1779. doi: 10.1080/14767058.2018.1527311. Epub 2018 Oct 29. PMID: 30235956.

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