

HCC OR NOT HCC – THAT IS THE QUESTION

Authors: Dr Lin Ling Xu, Dr Tejas Kotwal, Dr Nagendra Thayur

Affiliations: East Suffolk and North Essex NHS Trust

CASE SYNOPSIS

Initial presentation to GP

Clinical History: A 70-year-old male presents with a 3-week history of fever, fatigue, diarrhoea, rash and weight loss (10kg). No relevant travel history.

Past Medical History: No liver disease but previous alcohol intake of ~40 units/week, T2DM, stroke.

On examination he had mild RUQ abdominal tenderness.

Bloods: deranged liver function and raised inflammatory markers (fig.1)



Management

He was treated with co-amoxiclav for presumed cholecystitis and referred for **abdominal ultrasound** and **hepatology review**.



		Initial GP	Follow up
Liver function tests	Bili ($\mu\text{mol/L}$)	11	16
	ALT (iu/L)	33	28
	ALP (iu/L)	118	111
Inflammatory markers	WCC ($10^9/\text{L}$)	11.9	8.1
	CRP (mg/L)	59	<1

Figure 1: lab blood test results

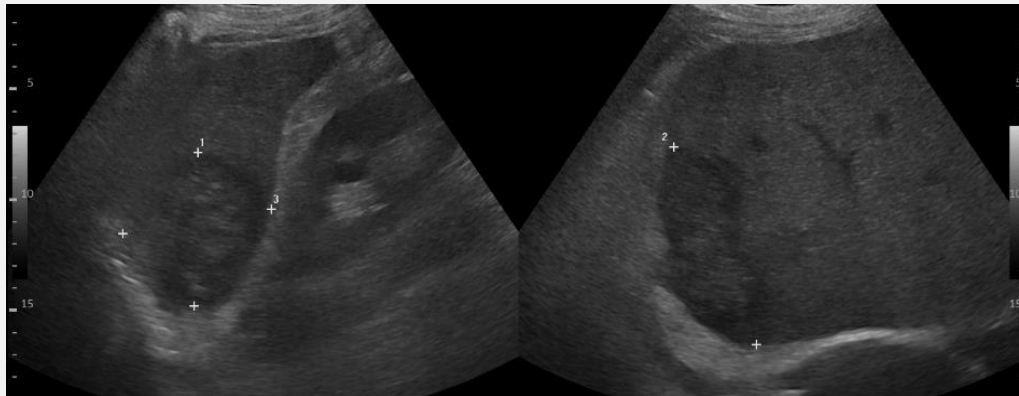


Figure 2: Ultrasound images of the right liver showing a hypoechoic solid 7 x 10 x 7 cm right liver lesion. No colour doppler signal within to indicate increased intralesional vascularity (not shown). Background diffusely increased parenchymal echogenicity. No intrahepatic biliary duct dilatation. Several gallstones in the gallbladder body but no evidence of cholecystitis (not shown).



Hepatology review a month later

- Symptoms and bloods had improved (fig.1)
- Serum was IgG4 normal
- **Abdominal ultrasound** revealed a solid 97mm lesion in a non-cirrhotic liver (fig.2)



Referred for an urgent **MRI Liver** and discussion in the regional **multi-disciplinary meeting**



Multi-disciplinary team discussions

- The **MRI** showed a locally invasive right liver lesion (fig.3) favouring diagnosis of hepatocellular carcinoma (HCC) or cholangiocarcinoma.
- **Biopsy** (recommended due to atypical features) revealed fibro-inflammatory tissue only, indicating **plasma-cell rich inflammatory pseudotumor (IPT)**.



Decision was made for **conservative management**

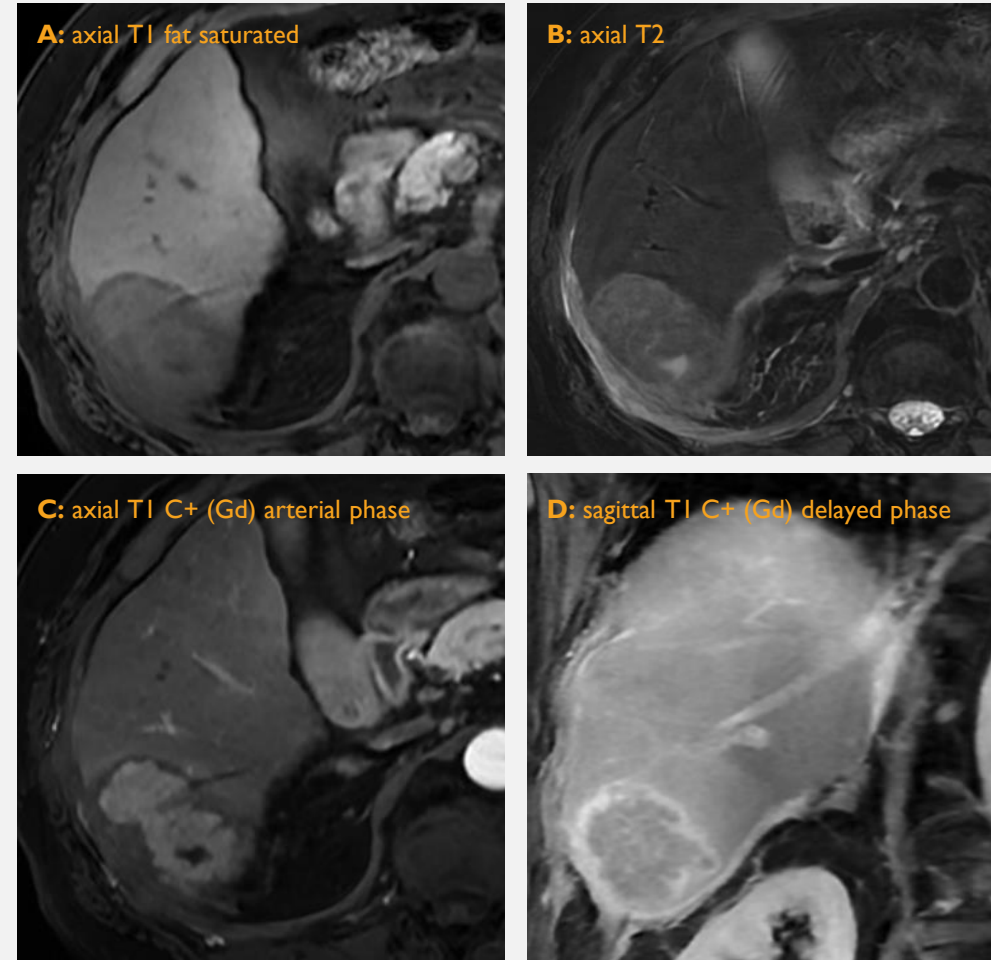


Figure 3: MRI demonstrated a segment 6 liver lesion that was hypointense on fat-saturated T1 sequence (A), mildly hyperintense on T2 (fat saturated) with eccentric cystic areas. (B) The lesion showed intense arterial hyperenhancement (C) with central washout on the delayed phase (D). There was local invasion with capsular breach, pleural involvement with small pleural effusion and corruption of the perinephric soft tissue.



Follow up

After 5 weeks of conservative management, CT showed significant decrease in lesion size (fig 4B).

At 12-month clinic follow up, the patient's symptoms had completely resolved with no relapses or additional complications. He was discharged from the HPB clinic.

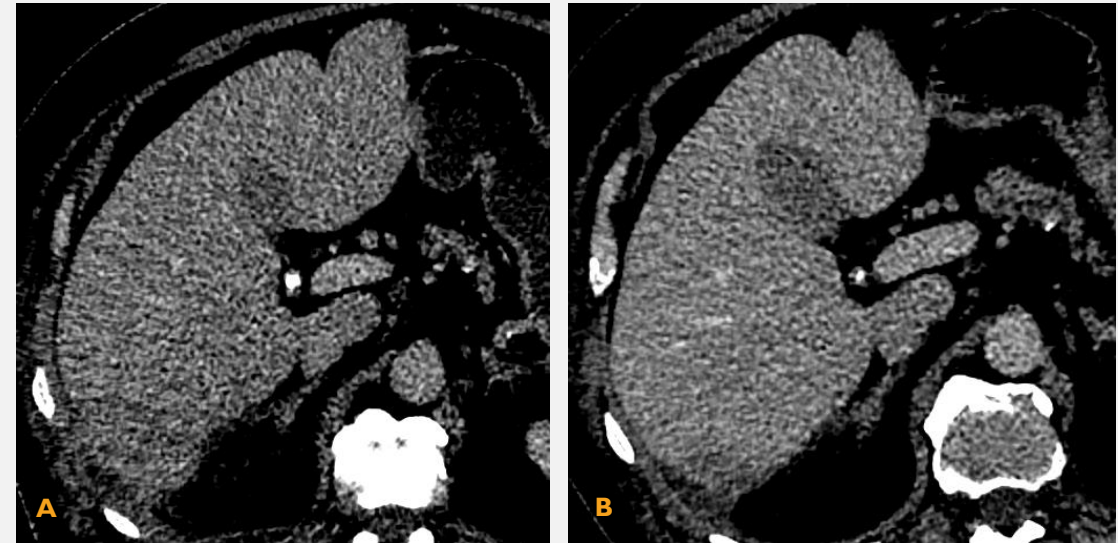


Figure 4: Initial portovenous phase CT shows showed a large solitary hypodense focal liver lesion and no other suspicious lesions (A). Follow up CT demonstrated interval decrease in size (B).

FINAL DIAGNOSIS:

Lymphoplasmacytic Inflammatory Pseudotumour (IPT)

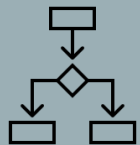
DISCUSSION – HEPATIC INFLAMMATORY PSEUDOTUMOUR (IPT)



IPTs are rare benign fibrotic lesions that manifest most commonly in the lung but can occur anywhere the body¹.



The cause of IPTs are unknown however they can arise as a response to infection, and autoimmune diseases - such as IgG4 related disease¹.



Pathologically, IPTs can be classified into 2 subtypes (fig 5). Despite some distinguishing features between them, the clinical presentation, lab results and imaging findings remain variable.

Interestingly, in this case of lymphoproliferative IPT, there were no IgG4 infiltrates on histology which is less common in this subtype. The peripheral location of this lesion was also atypical.

	Fibrohistiocytic	Lymphoplasmacytic
Presentation	Heterogenous group of disorders that include infection related lesions.	More commonly IgG4 related.
Imaging Features	Mostly occur in the peripheral hepatic parenchyma as mass-forming lesion. Venous occlusion with little inflammation and cholangitis without periductal fibrosis can be seen.	Hepatic hilar location. Obliterative phlebitis and cholangitis with periductal fibrosis were common features of the lymphoplasmacytic type.
Histology	Stromal fibrosis and fibroblastic proliferation. Infrequent IgG4 positive plasma cell infiltration.	Diffuse lymphoplasmacytic infiltration and prominent eosinophilic infiltration. Numerous IgG4 positive plasma cell infiltration.

Figure 5: Table detailing typical presentation, imaging features and histological findings of fibrohistiocytic and lymphoplasmacytic hepatic IPTs ^{1,2}.

DISCUSSION – LEARNING POINTS



Hepatic IPTs are known to mimic many other malignant and non-malignant processes including:

Hepatocellular carcinoma

**Intrahepatic
cholangiocarcinoma**

Abscess ^{1,4}

These cannot be distinguished alone on imaging, hence the importance of histology ².



In this case, IPT was possibly a **sequelae** of **partially treated liver abscess**. Clinical features supporting this diagnosis include acute history including fever and raised inflammatory markers.

Often non-specific presentation of IPTs is one of the diagnostic challenges.



Key Learning Point

Although rare, IPTs should remain a differential diagnosis of liver masses, especially with unusual clinical presentations and atypical features.

References

1. Patnana M, Sevrakov AB, Elsayes KM, et al. Inflammatory pseudotumor: the great mimicker. *AJR Am J Roentgenol* 2012;198:W217–27. doi:10.2214/AJR.11.7288 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/22358018>
2. Zhang, Y., Lu, H., Ji, H. and Li, Y. (2015). Inflammatory pseudotumor of the liver: A case report and literature review. *Intractable & Rare Diseases Research*, 4(3), pp.155–158. doi:<https://doi.org/10.5582/irdr.2015.01021>
3. Sheng R-F, Zhai C-W, Ji Y, et al. Role of Mr in the differentiation of IgG4-related from non-IgG4-related hepatic inflammatory pseudotumor. *Hepatobiliary Pancreat Dis Int* 2017;16:631–7. doi:10.1016/S1499-3872(17)60062-6 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/29291783>
4. Goldsmith PJ, Loganathan A, Jacob M et al. Inflammatory pseudotumours of the liver: a spectrum of presentation and management options. *Eur J Surg Oncol* 2009;35:1295–8. 10.1016/j.ejso.2009.04.003