ACCESS MICROBIOLOGY
an open research platform

MICROBIOLOGY SOCIETY

OPEN DATA OPEN ACCESS

Review Tool reports

UNDERSTANDING AND CONTEXTUALIZING THE REPORTS

Readers of these automated manuscript Review Tool reports are encouraged to use them to support them in performing their own assessment and 'health check' on a preprint prior to it completing peer review.

However, these should only be used as a guide, read within the overall context of the article itself, and should never replace full peer review. Please ensure you read the article fully alongside these and familiarize yourself with the tools and how they work, using the links provided below.

ITHENTICATE® REPORT

iThenticate® (https://www.ithenticate.com) checks the submitted article against an extensive database of articles from the internet and scholarly publications and highlights where similar sentences or phrases have been used previously, including in the author's own published work. Each individual match is given a percentage score based on how much it overlaps with the previously existing work, and an overall similarity score is given. The report generated from this are included here for transparency and can be cited independently using the DOI below.

- FAQs: https://www.ithenticate.com/products/faqs
- Help pages: https://help.turnitin.com/ithenticate/ithenticate-user/ithenticate-user.htm#TheSimilarityReport

How to cite the iThenticate report for this article:

Hachimi Idrissi M, Benass J, Zegmout A, Tazi I, Ben Lahlou Y, *et al*. iThenticate report for: Pancreatic Tuberculosis Revealed by a Mass with Neoplastic Appearance: A Case Report. *Access Microbiology*. 2024. https://doi.org/10.1099/acmi.0.000907.v1.1

Manuscript MA.docx

By Mariam Hachimi Idrissi

WORD COUNT	3134	TIME SUBMITTED	05-SEP-2024 12:05PM
		PAPER ID	111521419

Pancreatic Tuberculosis Revealed by a Mass with Neoplastic Appearance: A Case Report

1.1 Author names

Mariam Hachimi Idrissi [1], Jihane Benass[2], Adil Zegmout [3], Imane Tazi[4], Yassine Ben Lahlou [1], Elmostafa Benaissa [1], Seddik Hassan [2], Mariama Chadli [1]*

* Corresponding author

1.2 Affiliation(s)

[1] Department of Bacteriology, Mohammed V Military Teaching Hospital, Faculty of Medicine and Pharmacy, Mohammed V University in Rabat, Morocco.

[2] Department of Gastroenterology, Mohammed V Military Teaching Hospital, Rabat, Morocco.

[3] Department of Pulmonology, Mohamed V Military Teaching Hospital, Rabat, Morocco.

[4] Department of pathological anatomy, Mohammed V Military Teaching Hospital, Rabat, Morocco.

1.3 Corresponding author and email address

Name : Mariam Hachimi Idrissi **, Email:** Mariamhachimiidrissi1996@gmail.com.

1.4 Keywords

Tuberculosis; Pancreas; GeneXpert MTB/RIF; Echo endoscopy

2. Abstract

Introduction : Pancreatic tuberculosis is an extremely rare form of extrapulmonary tuberculosis. This condition can be challenging to diagnose due to its rarity, nonspecific symptoms, and radiological features that may mimic a neoplastic origin.

Case report: A 46-year-old immunocompetent patient with no past history of tuberculosis exposure, presented with spontaneously resolving jaundice over the past month, accompanied by non specific fever episodes and general fatigue with no other associated digestive symptoms. Abdominal CT and MRI scans revealed a poorly defined, partially necrotic mass in the pancreatic head with heterogeneous hypodensity and enhancement after contrast injection. Additionally, there were nodal and hilar macro-nodal lesions with necrotic appearances, as well as peripancreatic lymphadenopathy. The patient was scheduled for an Endoscopic ultrasound (EUS) examination which revealed the presence of a heterogeneous lesion with areas of necrosis in the posterosuperior aspect of the head and isthmus of the pancreas, accompanied by perilesional and celiac lymphadenopathies with necrotic centers. EUS-guided tissue sampling allowed the diagnosis of pancreatic tuberculosis, with both histological examination and GeneXpert MTB/RIF testing rapidly positive for *Mycobacterium tuberculosis*, followed by culture on solid Loewenstein-Jensen medium. The patient responded well to antitubercular chemotherapy .

Conclusion: Pancreatic tuberculosis, though rare, should be considered in cases of pancreatic masses, especially in endemic regions. Tissue samples with necrosis should be tested for *Mycobacterium tuberculosis* using GeneXpert and Loewenstein-Jensen culture. This work highlights the GeneXpert MTB/RIF test as highly sensitive, specific, and fast, making it ideal for diagnosing extra-pulmonary tuberculosis, particularly when smear results are negative.

3. Data Summary

No data was generated during this research or is required for the work to be reproduced.

4. Introduction

Pancreatic tuberculosis is an exceedingly rare form of extrapulmonary tuberculosis even in endemic countries where cases account for less than 5% as demonstrated by autopsy studies (1). This particular form of pseudotumoral mass presentation mimicking a pancreatic neoplasm but also other pancreatic disorders like chronic pancreatitis ,pancreatic cystic neoplasms, and autoimmune pancreatitis can be challenging to diagnose due to its rarity, nonspecific symptoms, and radiological features that may mimic a neoplastic origin. (2)Diagnosis often relies on imaging tests such as computed tomography or magnetic resonance imaging , as well as pancreatic tissue sampling (3). The presence of granulomas is the most common finding on histological examinations, **but due to its non-specific nature,** the bacteriology laboratory plays a crucial role in diagnosing pancreatic tuberculosis by conducting various microbiological tests to detect the presence of *Mycobacterium tuberculosis* in the collected samples**.** Real-time PCR is an invaluable tool for diagnosing extrapulmonary tuberculosis. Its use increases the sensitivity of detecting the *M. tuberculosis* complex. It does not replace traditional diagnostic methods but complements them to achieve better sensitivity and faster results with a sensitivity of 87.5% for biopsies. (4). We report a case of pancreatic tuberculosis in a 45-year-old patient presenting as a pancreatic mass.

5. Case Presentation

A 45-year-old immunocompetent patient with no significant medical history and no history of tuberculosis exposure, presented with a three-month history of non specific fever with chills without other associated signs. During the following month, he presented with spontaneously resolving jaundice with no abdominal pains, digestive bleeding, or transit disorders. This occurred in the context of asthenia, anorexia, and unspecified weight loss. Abdominal examination revealed a non-distended abdomen, with palpation showing no tenderness or hepatosplenomegaly. There was no palpable mass, nor peripheral lymphadenopathy. The rest of the clinical examination was normal.

Morphological exploration by abdominal-ultrasound revealed highly hyperechoic hilar hepatic lymph nodes, nearly liquefied, with the largest measuring 23.1 mm in the minor axis,

accompanied by a discreet peri vesicular fat infiltration. Abdominal CT scan showed a lesion in the head of the pancreas, poorly delineated, with heterogeneous density, partially necrotic, and enhanced after injection. This lesion encompassed the hepatic hilum, including the hepatic artery and portal trunk, both of which remained patent. Additionally, there were nodal and hilar macro-nodal lesions with necrotic appearances, as well as peripancreatic lymphadenopathy, leading to dilation of the main biliary duct, especially at the hilum, not recognizable within the pancreas **(Figure 1)**.

Further abdominal MRI revealed a lesion involving the head and isthmus of the pancreas, measuring 57 x 20 x 26 mm in size, with a few fluid-filled compartments and retro pancreatic lymph nodes with necrotic centers. This lesion remained distant from vascular structures and was consistent with a cystic tumor of the pancreatic head with necrotic lymphadenopathy. **(Figure 2)**

Laboratory tests revealed an elevated C-reactive protein (CRP) level at 19.9 mg/l. Serum alanine aminotransferase activity was 16 UI/L, aspartate aminotransferase was 18 UI/L, total bilirubin was 28 mg/l gamma-glutamyl transferase was 64 UI/L, and alkaline phosphatase was 75 mg/l. White blood cell count was 9100/mm3. Lipase levels were 55 UI/l. Tumor markers were within normal limits.

Given the pseudo tumoral appearance of the lesion and the presence of peripancreatic lymphadenopathy with areas of necrosis, an abdominal endoscopic ultrasound (EUS) was performed, revealing a heterogeneous lesion with areas of necrosis and lobulated contours in the posterosuperior aspect of the head and isthmus of the pancreas, measuring 64 x 40 mm, accompanied by perilesional and celiac lymphadenopathies with necrotic centers. **(Figure 3)**

EUS-guided tissue sampling using Fine Needle Aspiration (EUS-FNA) was performed, and was sent both to pathology and for bacteriological examination.

In the bacteriology laboratory, fluorescent staining with Auramine as well as Ziehl-Neelsen staining were performed, both yielding negative results after careful examination of the slides.

The Xpert MTB/RIF test, performed on a fragment of pancreatic biopsy confirmed the diagnosis: MTB detected at a low level with no detected resistance to Rifampicin, as well as no detection of mutations.

Culture was performed on Lowenstein Jensen solid medium, which tested positive after 26 days with the appearance of 3 colonies with a cream-beige hue, dry, rough-surfaced, verrucous, and cauliflower-like in appearance. **(Figure 4)**

The histopathological examination of the pancreatic biopsy favored a chronic epithelioid and giant-cell inflammatory reaction with eosinophilic caseous necrosis, consistent with a tuberculous origin**. (Figure 5)**

The chest X-ray and search for *Mycobacterium tuberculosis* in sputum, was negative.

Medical treatment consisting of antibacterial chemotherapy was initiated, following the therapeutic regimen 2RHZE/4RH, which includes a combination of isoniazid, rifampicin, ethambutol, and pyrazinamide for two months, followed by a two-drug regimen of isoniazid and rifampicin for six months. After 4 months of treatment, there was a resolution of jaundice, with CT imaging showing regression of the pancreatic lesion and normalization of the biological profile.

6. Figures and tables

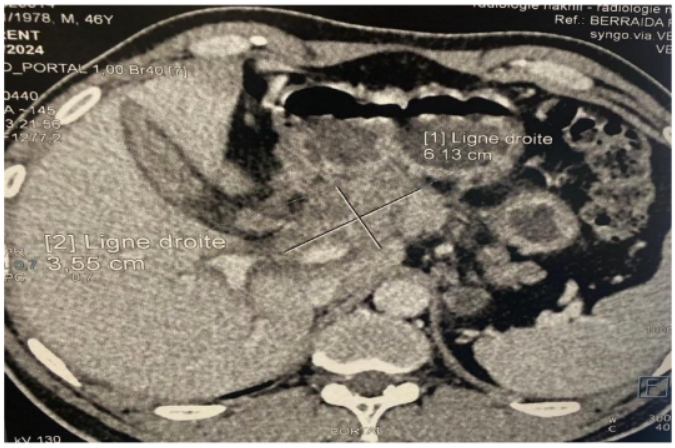

Figure 1: Abdominal CT scan: hypodense mass in the head of the pancreas (Cross)

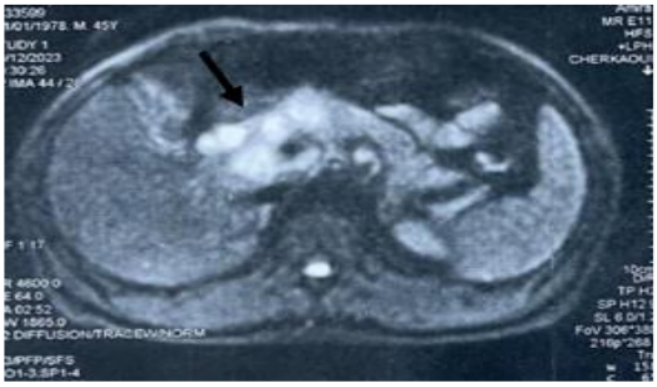

Figure 2: Magnetic resonance imaging showing a lesion involving the head and isthmus of the pancreas (Arrow) with lymph nodes.

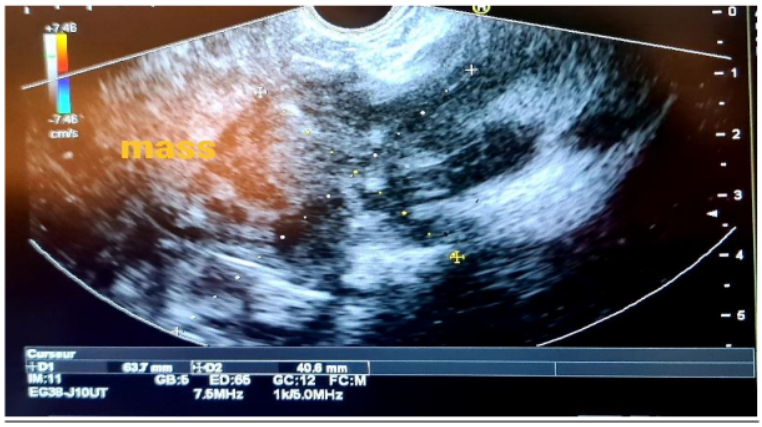

Figure 3: Endoscopic ultrasound showing heterogenous lesion of the pancreatic head and isthmus, with irregular lobulated contours and containing some necrotic areas, measuring 64 x 40 mm.

Figure 4: Positive culture on solid Loewenstein-Jensen medium with the appearance of 3 colonies (Circle) with a cream-beige hue, dry, rough-surfaced, verrucous, and cauliflower-like in appearance

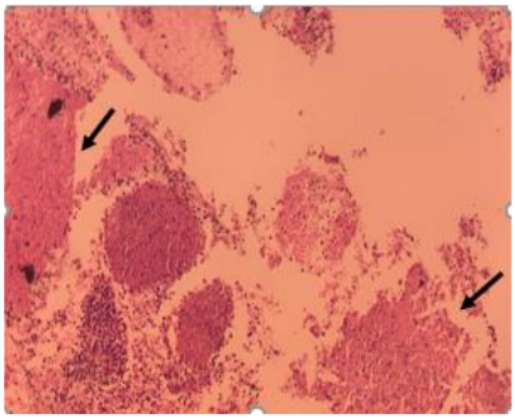

Figure 5: The histopathological examination shows an epithelioid and giant-cell granuloma

(Arrow) with eosinophilic caseous necrosis compatible with a tuberculous origin.

7. Discussion

Pancreatic tuberculosis is a rare form of extrapulmonary tuberculosis, most often associated with miliary tuberculosis. (5). Involvement of the pancreas alone is exceptionally uncommon, and accounts for fewer than 5% of cases. (1) There are two possible explanations for the pancreas's resistance to tuberculous infection. One possible explanation is anatomical; the pancreas, being retroperitoneal, seems to be shielded from direct exposure to the environment. Another explanation could be biochemical, related to the antibacterial properties of pancreatic enzymes, especially lipase. Tuberculous infection of the pancreas consequently necessitates a substantial inoculation of bacilli. This typically happens through contiguous spread from involved peripancreatic lymph nodes, but can also occur, though rarely, through contiguous or hematogenous spread from a hidden site (often originating in the lungs) or reactivation of a latent infection. under the influence of immunosuppression, as in miliary tuberculosis with multivisceral involvement. (1)

Auerbach documented the first case of pancreatic tuberculosis in 1944, based on his examination of 1,656 autopsies of patients with tuberculosis . Pancreatic involvement was found in only 14 cases, indicating an incidence of 4.7%. (1) Most studies of pancreatic tuberculosis suggest a male preponderance among the reported cases, with the exception of two reports from South Korea and China. (2). Published series typically report an average age of onset for pancreatic tuberculosis ranging from 36 to 56 years, indicating that the condition most commonly affects individuals during their forties and fifties. (2)

Its clinical and radiological features may mimic those of pancreatic cystic neoplasms, retroperitoneal lymph node metastases, or lymphoma, making it a challenging clinical diagnosis. (6) This disease presents in imaging either as: a solid form, which should be differentiated from pancreatic adenocarcinoma and focal chronic pancreatitis. ; a cystic form, where the differential diagnosis mainly includes pancreatic cystic neoplasms (pseudocysts and tumors) ; or a mixed form, where necrotic pancreatic adenocarcinoma should also be considered.The presence of a pancreatic mass, peripancreatic lymphadenopathy, calcifications,

and even vascular invasion are common features of both tuberculosis and pancreatic malignancy. Histopathological or microbiological evidence is the only reliable method to definitively distinguish tuberculosis from other pancreatic diseases.

Symptomatology can be varied and nonspecific and may include abdominal pain, typically localized to the epigastric region or the upper left quadrant of the abdomen, which is one of the most common symptoms of pancreatic tuberculosis, anorexia, fever, and night sweats, vomiting, diarrhea which may develop due to pancreatic dysfunction as well as jaundice, in advanced stages due to obstruction of the bile duct by inflammatory lymph nodes or compressive lesions. The presence of an abdominal mass has also been reported in a variable number of patients in some reports. Bleeding in the gastrointestinal tract has also been documented as well as the formation of arterial pseudoaneurysms. Other complications include gastric outlet obstruction, portal hypertension, diabetes mellitus, abscess formation, and recurrent acute pancreatitis. It is important to note that pancreatic tuberculosis may be asymptomatic in some patients, particularly in the early stages of the disease. (2)

The presence of extra-pancreatic lesions, particularly pulmonary, on chest radiography can be an indicator of pancreatic involvement by tuberculosis. Abnormal chest radiographs have been reported in nearly 50% of patients with pancreatic tuberculosis. Other lesions such as the thickening of the ileocecal region, pearly kidney, ascites, and lesions in the spleen have been reported. Tuberculosis history has been noted in 44% of the cases. A positive tuberculin skin test has been detected in 32 to 71% of patients with pancreatic tuberculosis, according to various series. (2)

Abdominal computed tomography (CT) is often the initial imaging modality used for evaluating patients with pancreatic tuberculosis. It provides valuable information about the size and nature of tuberculous lesions, as well as the presence of ascites and lymphadenopathy. (2) Pancreatic tuberculosis may manifest as hypo- or iso-dense pancreatic masses with variable enhancement after contrast injection. These lesions can be focal or diffuse and may be associated with thickening of the pancreatic duct walls. (2) In a study involving 32 patients with pancreatic tuberculosis, 28 (87.5%) presented with a bulky, heterogeneous pancreas. Additionally, 20 (62.5%) had multiple focal lesions, and 12 (37.5%) had a single focal lesion. Lesions were observed in the body, head, and tail of the pancreas in 56%, 50%, and 9% of

patients, respectively. (7) In another study involving nine patients with pancreatic tuberculosis (eight of whom underwent computed tomography), imaging revealed a mass in the pancreatic head in five patients, a mass in the tail in one patient, cystic lesions in two patients, and calcification and splenic vein thrombosis in one patient each. (8) The pancreatic head was the most frequently involved region in most reports. (2)In our case, abdominal CT showed a lesion involving the head of the pancreas, poorly delineated, with heterogeneous density, partially necrotic, and enhanced after contrast injection. However, computed tomography cannot distinguish tuberculosis from pancreatic carcinoma. The diagnostic hypothesis is further strengthened when imaging reveals a hypodense mass surrounded by a thick, hyperdense capsule, along with target-shaped enhanced lymphadenopathy with necrotic-centered lymphadenopathy in the retro-pancreatic, celiac, mesenteric, or para-aortic regions. Peripancreatic collections should also alert the radiologist to the possibility of pancreatic tuberculosis, particularly in regions where tuberculosis is endemic.(9)

Magnetic resonance imaging has occasionally been utilized in the assessment of pancreatic tuberculosis. Magnetic resonance cholangiopancreatography may reveal dilation of the bile and pancreatic ducts due to obstruction caused by a tubercular mass in the pancreatic head..(10)

Endoscopic ultrasound has emerged as a valuable modality for evaluating the pancreaticobiliary system. Not only does it allow assessment of pancreatic lesion and size, but it also aids in determining the presence of ductal dilation, lymphadenopathy, vascular invasion and calcifications. It also enables sampling of these lesions, providing material for microbiological and cytological evaluation. (2)

The bacteriological diagnosis primarily relies on the detection of mycobacterial cultures on Lowenstein-Jensen medium. However, the major drawback is the slow growth of these cultures, which can take up to 6 weeks. (11)

Currently, diagnosing extra-pulmonary tuberculosis remains a challenge for clinicians and microbiologists worldwide. The difficulty in accessing specific sampling sites leads to paucibacillary samples, which reduces the sensitivity of conventional diagnostic tests. Additionally, this form of tuberculosis is often difficult to suspect during clinical examinations due to its variable clinical presentations. The introduction of molecular tests appears to offer

significant improvements in diagnosing extra-pulmonary tuberculosis, particularly in cases involving paucibacillary samples , even when staining techniques and tissue sample cultures show negative results. (12) (11)

The diagnosis of pancreatic tuberculosis is confirmed by histopathological examination of specimens obtained via laparotomy, percutaneous radio guided fine needle aspiration, or endoscopic ultrasound, as was the case for our patient, thus avoiding unnecessary laparotomy. It allows for the identification of the pathognomonic lesion of tuberculosis: the epithelioid-giant cell granuloma with caseous necrosis. (9)

The treatment relies on the prompt initiation of anti-tubercular chemotherapy, lasting from 6 to 9 months, comprising the following therapeutic regimen: Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol (RHZE) for 2 months, followed by Rifampicin and Isoniazid (RH) for 4 to 7 months. This treatment may be extended up to 12 months if the isolated strain is resistant. In case of complications, surgical intervention may be considered. (13)

8. Conclusion

Pancreatic tuberculosis is rare but should be considered in the diagnosis of extrapulmonary infections caused by *Mycobacterium tuberculosis*. It requires high suspicion, especially in endemic countries, due to its potential to mimic pancreatic cystic neoplasms, retroperitoneal lymph node metastases, or lymphoma. When a pancreatic mass with necrosis is detected, tissue samples should be sent for both bacteriological and pathological analysis to look for *Mycobacterium tuberculosis*

The role of the bacteriology laboratory is crucial in confirming the infection, utilizing a combination of microbiological techniques. Real-time PCR is a very useful tool for diagnosing extrapulmonary tuberculosis, which remains a serious infectious disease with sometimes lengthy diagnostic procedures. These forms, which account for 27% of tuberculosis cases, are particularly challenging to diagnose. (14)

9. Author statements

9.1 Author contributions

M.H.I contributed to the initial drafting of the manuscript, while J.B, A.Z, S.H, Y.E, EL. B and Y.B revised it. M.C. provided final approval for the version to be published.

9.2 Conflicts of interest

The authors declare that there are no conflicts of interest.

9.3 Funding information

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

9.4 Consent for publication

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

10. References

1. Gartini S, Ramdani A, Rhazari M, Thouil A, Kouismi H, Aharmim M, et al. Exceptional association of hepatic and pancreatic tuberculosis mimicking metastatic pancreatic neoplasia: A case report and review of the literature. Ann Med Surg [Internet]. 2022;77(February):103717. Available from: https://doi.org/10.1016/j.amsu.2022.103717
2. Sharma V, Rana SS, Kumar A, Bhasin DK. Pancreatic tuberculosis. J Gastroenterol Hepatol. 2016;31(2):310–8.
3. Hellara O, Noomène F, Toumi O. Tuberculose pancréatique à présentation pseudotumorale. J Chir Viscerale [Internet]. 2012;149(4):317–9. Available from: http://dx.doi.org/10.1016/j.jchirv.2012.03.008
4. Marouane C, Smaoui S, Kammoun S, Slim L, Messadi-Akrout F. Évaluation du GeneXpert® MTB/RIF dans la détection moléculaire de la tuberculose extra-pulmonaire et de la résistance à la rifampicine. Med Mal Infect [Internet]. 2016;46(1):20–4. Available from:

http://dx.doi.org/10.1016/j.medmal.2015.10.012

5. Rouibaa F, Amrani L, Mahi M, Amrani N, Aourarh A. Tuberculose pancréatique pseudo-tumorale : une cause rare d'ictère cholestatique. Hegel. 2012;N° 4(4):55–60.

6. Mora Cuadrado N, Berroa de la Rosa E, Velayos Jiménez B, Herreros Rodríguez J, Abril Vega CM, de la Serna Higuera C, et al. Tuberculosis, one more consideration in the differential diagnosis of a pancreatic mass. Gastroenterol Hepatol [Internet]. 2017;40(9):619–21. Available from: http://dx.doi.org/10.1016/j.gastrohep.2016.08.004

7. Nagar AM, Raut AA, Morani AC, Sanghvi DA, Desai CS, Thapar VB. Pancreatic tuberculosis: A clinical and imaging review of 32 cases. J Comput Assist Tomogr. 2009;33(1):136–41.

8. Chaudhary A, Negi SS, Sachdev AK, Gondal R. Pancreatic tuberculosis: Still a histopathological diagnosis. Dig Surg. 2002;19(5):389–92.

9. Anajjar M, Essarghini M, El Mouhafid F, El Brahmi Y, El Yakka M, Elfahssi M, et al. Tuberculose pancréatique, une forme fortement simulatrice de malignité. PAMJ Clin Med. 2020;3(72):1–6.

10. Sportes A, Kpossou R, Bernardin S. Isolated pancreatic tuberculosis mimicking inoperable pancreatic cancer: A diagnostic challenge resolved by endoscopic ultrasound-guided fine-needle aspiration. Can J Gastroenterol. 2013;27(8):445–7.

11. Hammada T, Khider A, Boutra F, Boumendjel M, Bennani A, Bechiri JZ, et al. Tuberculose du pancréas révélée par des vomissements : à propos d'un cas. J Africain d'Hepato-Gastroenterologie. 2015;9(1):44–6.

12. Mechal Y, Benaissa E, El Mrimar N, Benlahlou Y, Bssaibis F, Zegmout A, et al. Evaluation of GeneXpert MTB/RIF system performances in the diagnosis of extrapulmonary tuberculosis. BMC Infect Dis. 2019;19(1):1–8.

13. Ikkache Y. GSJ : Volume 8 , Issue 3 , March 2020 , Online : ISSN 2320-9186 Tuberculose pancréatique révélée par une masse d ' allure néoplasique Pancreatic tuberculosis mimicking a malignant tumor Auteur : Co Auteurs : 2020;8(3):2900–4.

14. Billard-pomares T, Cruaud P, Lo S, Méchaï F, Addane A, Zahar J-R, et al. Performance de la PCR GeneXpert MTB/RIF dans le diagnostic des tuberculoses extrapulmonaires ? Médecine Mal Infect. 2018;48(4):S116–7.

Manuscript MA.docx

ORIGINALITY REPORT

23%
SIMILARITY INDEX

PRIMARY SOURCES

1	onlinelibrary.wiley.com Internet	193 words — 6%
2	bmcinfectdis.biomedcentral.com Internet	34 words — 1%
3	"Tuberculosis of the Gastrointestinal system", Springer Science and Business Media LLC, 2022 Crossref	33 words — 1%
4	www.ijias.issr-journals.org Internet	28 words — 1%
5	Sara Gartini, Abdelbassir Ramdani, Meriem Rhazari, Afaf Thouil, Hatim Kouismi, Mohammed Aharmim, Jamal Eddine Bourkadi. "Exceptional association of hepatic and pancreatic tuberculosis mimicking metastatic pancreatic neoplasia: A case report and review of the literature", Annals of Medicine and Surgery, 2022 Crossref	27 words — 1%
6	Yafang Dou, Zonghui Liang. "Pancreatic tuberculosis: A computed tomography imaging review of thirteen cases", Radiology of Infectious Diseases, 2019 Crossref	26 words — 1%
7	d197for5662m48.cloudfront.net Internet	24 words — 1%

8	SAMIA BAZHAR, Yassine ElBenaissi, Elmostafa Benaissa, Yassine Ben Lahlou, Mariama Chadli. " <xhtml:span xmlns:xhtml="http://www.w3.org/1999/xhtml" xml:lang="en">Invasive Streptococcus pyogenes Infection: A case report </xhtml:span>", Microbiology Society, 2024 Crossref Posted Content	23 words — 1%
9	Leila Laamara, Elmostafa Benaissa, Amine Achemlal, Amal Bounakhla et al. "Peritoneal Tuberculosis, an underestimated diagnosis: A case report", Microbiology Society, 2024 Crossref Posted Content	21 words — 1%
10	"Abstracts", HPB, 9/1/2006 Crossref	20 words — 1%
11	Fatima ZIAD, Elmostafa Benaissa, Yassine Ben lahlou, Adil Maleb, Mariama Chadli, Mostafa Elouennass. "Cutaneous tuberculosisan unusual localization: A case report", Microbiology Society, 2024 Crossref Posted Content	18 words — 1%
12	medicaid.alabama.gov Internet	18 words — 1%
13	journals.lww.com Internet	16 words — 1%
14	www.ncbi.nlm.nih.gov Internet	16 words — 1%
15	Mohammed Labrigui, Hamza Layat, Manal Bouikhif, Fatima Ziad, Zimi Khalil, Zineb Jerroundi, Hafid Zahid, Zohra Ouzzif. "Fortuitous discovery of a microfilaria of the genus Loa loa during a routine blood smear	14 words — < 1%

at the Hematology Laboratory of the Mohamed V Military Instruction Hospital in Rabat: A case report", Microbiology Society, 2024
Crossref Posted Content

16 Imen Jemni, Imen Akkari, Soumaya Mrabet, Elhem Ben Jazia. "Isolated pancreatic tuberculosis mimicking pancreatic cancer in an immunocompetent host: An elusive diagnosis", Radiology Case Reports, 2020 — 13 words — < 1%
Crossref

17 joii-journal.springeropen.com — 13 words — < 1%
Internet

18 www.igi-global.com — 13 words — < 1%
Internet

19 "Imaging of Tuberculosis", Springer Science and Business Media LLC, 2022 — 11 words — < 1%
Crossref

20 Fuat Ozkan, Ertan Bulbuloglu, Mehmet Fatih Inci, Hamide Sayar, Hasan Kahraman, Murvet Yuksel. "Isolated Pancreatic Tuberculosis Mimicking Malignancy and Causing Obstructive Jaundice", Journal of Gastrointestinal Cancer, 2012 — 11 words — < 1%
Crossref

21 Surinder S. Rana, Vishal Sharma, Ravi Sharma, Deepak K. Bhasin. "Involvement of mediastinal/intra.abdominal lymph nodes, spleen, liver, and left adrenal in presumed isolated pancreatic tuberculosis: An endoscopic ultrasound study", Journal of Digestive Endoscopy, 2019 — 10 words — < 1%
Crossref

22 worldwidescience.org — 10 words — < 1%
Internet

23	Daniel J. Waintraub, Lionel S. D'Souza, Emilio Madrigal, Manju Harshan, Gil I. Ascunce. "A Rare Case of Isolated Pancreatic Tuberculosis", ACG Case Reports Journal, 2016 Crossref	9 words — < 1%
24	David Midlick, Jason Harhay, Nathan A Summers. "Carbapenem-Resistant Citrobacter amalonaticus and VRE Bacteremia in an Immunocompetent Patient after Urologic Rezum Procedure", Microbiology Society, 2024 Crossref Posted Content	9 words — < 1%
25	Pi-Jiang Sun, Yan Lin, Xi-Jun Cui. "Isolated pancreatic tuberculosis with elevated CA 19-9 levels masquerading as a malignancy", Medicine, 2018 Crossref	9 words — < 1%
26	www.researchsquare.com Internet	9 words — < 1%
27	Arvind Singh, Archana Khanduri, Nalini Bansal, Pradip Pokharia, Rahul Gupta. "Pancreatoduodenal Tuberculosis: A Rare Site of a Common Disease", Cureus, 2022 Crossref	8 words — < 1%
28	Assembly on Transplantation and Transplant Techiques SEPAR. "Diagnosis and Treatment of Pleural Effusion", Archivos de Bronconeumologia (Internet), 200607 Crossref	8 words — < 1%
29	Peter Barnes, Peter D. O. Davies, Stephen B Gordon. "Clinical Tuberculosis", CRC Press, 2019 Publications	8 words — < 1%
30	link.springer.com Internet	8 words — < 1%

31	www.primescholars.com Internet	8 words — < 1%
32	www.thieme-connect.com Internet	8 words — < 1%
33	Abhishek Bhurwal, Muhammad Masoodul Haq, Sunil Sapru, Matthew Tortora, Dhanasekaran Ramasamy. "Isolated Pancreatic Tuberculosis Mimicking Pancreatic Cancer: A Diagnostic Challenge", Case Reports in Gastrointestinal Medicine, 2018 Crossref	6 words — < 1%
34	C. Marouane, S. Smaoui, S. Kammoun, L. Slim, F. Messadi-Akrout. "Evaluation of molecular detection of extrapulmonary tuberculosis and resistance to rifampicin with GeneXpert® MTB/RIF", Médecine et Maladies Infectieuses, 2016 Crossref	6 words — < 1%
35	Gokul S Shankar, Sreeja Nair, Teena Jacob, Mercy John Idikula. "Brain Tuberculoma: CSF CBNAAT for Mycobacterium tuberculosis negative but Biopsy Culture positive - OLD is still GOLD: a case report", Microbiology Society, 2023 Crossref Posted Content	6 words — < 1%

EXCLUDE QUOTES	OFF	EXCLUDE SOURCES	OFF
EXCLUDE BIBLIOGRAPHY	ON	EXCLUDE MATCHES	OFF