

肝内胆囊伴胆囊结石的治疗体会及文献综述

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摘要

肝内胆囊是先天性异位胆囊中较常见的第二种, 由于胆囊被肝脏完全或部分包裹, 阻碍了胆囊排空, 既增加了胆囊病变的风险, 也给诊断和手术带来了更多挑战。目的: 本文旨在探讨肝内胆囊伴胆囊结石的手术方式。方法: 应用腹腔镜联合胆道镜保胆取石术治疗肝内胆囊伴胆囊结石。结果: 成功实施腹腔镜联合胆道镜保胆取石术, 术中、术后无并发症。结论: 腹腔镜联合胆道镜保胆取石术是治疗浅表型肝内胆囊伴单发胆囊结石的安全有效的治疗方法。

关键词

异位胆囊, 肝内胆囊, 腹腔镜, 胆道镜, 保胆取石术

Therapeutic Experience and Literature Review of Intrahepatic Gallbladder with Gallstones

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Abstract

The intrahepatic gallbladder is the second most common type of congenital ectopic gallbladder. This

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both increases the risk of gallbladder pathology and creates additional diagnostic and surgical challenges, as the gallbladder is completely or partially encased by the liver, which prevents it from emptying. Objective: This article discusses the surgical approach to intrahepatic gallbladder with cholecystolithiasis. Methods: Therapy of intrahepatic gallbladder with cholecystolithiasis by laparoscopic combined choledochoscopic cholecystectomy for cholecystolithotripsy. Results: Successful laparoscopic gallbladder-preserving cholecystolithotomy by laparoscopic combined choledochoscopic without intraoperative and postoperative complications. Conclusion: Gallbladder-preserving cholecystolithotomy by laparoscopic combined choledochoscopic is a safe and effective treatment for superficial intrahepatic gallbladder with solitary cholecystolithiasis.

Keywords

Ectopic Gallbladder, Intrahepatic Gallbladder, Laparoscopy, Choledochoscopy, Gallbladder-Preserving Cholecystolithotomy

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1. 简介

肝内胆囊是第二常见的先天性异位胆囊[1], 发生率为 0.1%~0.7% [2] [3]。胆囊外包绕的肝组织不同程度上阻碍了胆汁排泄, 限制了胆囊收缩, 这使肝内胆囊患者发生胆囊结石的风险高达 60% [4]。肝内胆囊作为生理性变异, 一般无任何症状。然而也有肝内胆囊导致 Mirizzi 综合征、急性梗阻性黄疸、继发性肝脓肿、胆囊穿孔甚至胆囊癌变的相关报道[5]-[8]。由于肝内胆囊发病率罕见, 超声、MRI、CT 等检查易忽视胆囊位置关系, 且胆囊肝内异常位置的不固定性, 肝内胆囊的手术风险也随之上升。肝内胆囊位置的特殊性, 意味着增加了术中肝脏出血、胆总管甚至左右肝管损伤的风险, 也使手术时间一定延长。

位置各异的肝内胆囊, 使得肝内胆囊合并胆囊结石手术目前为止没有统一的标准方式, 具体方式往往取决于术中位置的反复探查, 如考虑合并胆囊萎缩, 甚至有必要术中行超声定位胆囊结石[9], 以减少术中损伤。本文介绍了 1 例肝内胆囊合并胆囊结石的病例, 术中探查明确浅表型肝内胆囊伴胆囊结石。

2. 病例报告

2.1. 一般资料

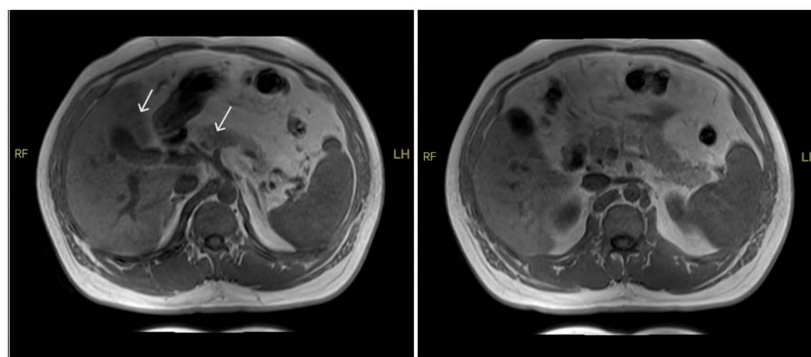
本例患者男性, 39 岁, BMI 31.22 kg/m², 因右上腹疼痛入院。查体右上腹压痛。患者既往右侧输尿管结石、右侧肾结石。血常规结果正常, 血生化: 天冬氨酸转氨酶 25 U/L (正常 < 37 U/L), 丙氨酸转氨酶 62 U/L (正常 < 41 U/L), 碱性磷酸酶 84 U/L (正常 45~125 U/L), γ -谷氨酰转肽酶 65 U/L (正常 11~61 U/L), 总胆红素 6.58 μ mol/L (正常 5.1~28 μ mol/L), 直接胆红素 1.09 μ mol/L (正常 0~10 μ mol/L), 间接胆红素 5.49 μ mol/L (正常 2.4~26 μ mol/L), 脂肪酶 38 U/L (正常 0~60 U/L), 淀粉酶 53 U/L (正常 < 220 U/L)。尿常规: 尿胆原(+). 超声检查发现胆囊内可见单个强回声团, 大小约 21 mm $\times$ 17 mm, 后伴声影, 改变体位依重力方向移动(图 1)。进一步行上腹部 MRI + MRCP 可见: 胆囊内单一低信号影, 直径约 17 mm (图 2, 图 3), MRCP 未见胆管扩张、结石。



注：超声见胆囊底单一结石，后伴声影；箭头处可见胆囊颈部深埋肝右叶。

Figure 1. Pre-operative abdominal ultrasound

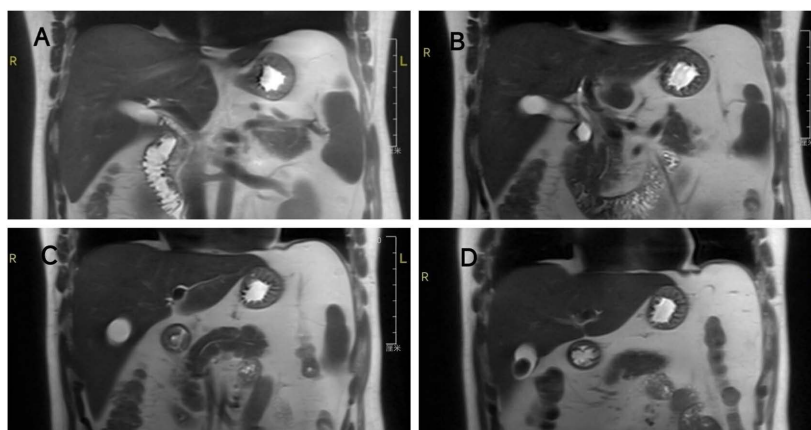
图 1. 术前腹部超声



注：左图箭头处均示肝脏，可见胆囊颈、胆囊管及胆囊体均深埋肝实质；右图可见肝右叶外侧囊样突出，考虑为胆囊底。

Figure 2. Preoperative MRI cross-section of the abdomen

图 2. 术前腹部 MRI 水平面



注：A：Calot 三角结构被肝实质包裹；B：胆囊体深行肝右叶；C：胆囊体在肝右叶形成囊性缺损灶；D：胆囊底自肝右叶穿出，并见结石。

Figure 3. Preoperative MRI coronal surface of the abdomen

图 3. 术前腹部 MRI 冠状面

2.2. 手术方式

排除手术禁忌症后，在全麻下准备手术。患者麻醉成功后，腹部常规消毒铺单，取头高脚低左倾 30° 体位，插入戳卡，置入腹腔镜后，术中我们发现肝右叶下胆囊窝未见常规胆囊床，在肝右叶实质中发现

胆囊底(图 4), 经反复探查后确认胆囊体、胆囊颈、胆囊三角均深埋在肝脏组织内(图 5), 明确为浅表型肝内胆囊。考虑胆囊大部深埋肝右叶, Calot 三角不可见, 且超声、MRI 提示胆囊内为单一结石, 最终决定在胆囊底部切开 2 cm 切口, 取石钳取出一直径约 2 cm 完整胆囊结石(图 6)。经胆囊底部切口插入胆道镜检查, 未见残余结石, 胆囊壁未见胆固醇结晶, 反复冲洗后探查胆囊及胆囊管通畅(图 7), 排除残余结石可能, 然后全层缝合胆囊底部切口(图 8), 置入腹腔引流管 1 根, 最后常规探查无误后逐个关闭戳孔。

手术后患者恢复良好, 术后观察腹腔引流管未见胆漏、腹腔感染等术后并发症, 并于术后第 3 天拔除腹腔引流管, 术后第 4 天患者顺利出院。3 周后门诊复查血常规、肝功能均未见异常。

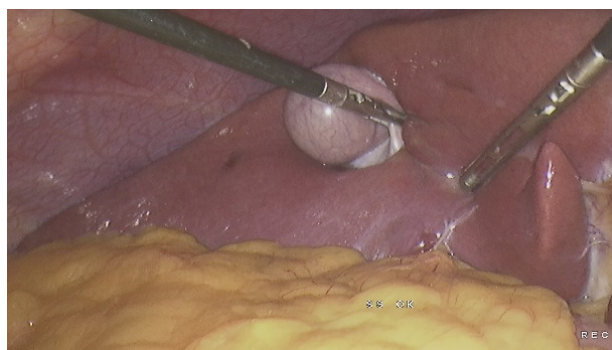


Figure 4. The bottom of the gallbladder penetrates externally and inferiorly from the middle of the right lobe of the liver

图 4. 胆囊底自肝右叶外下穿出

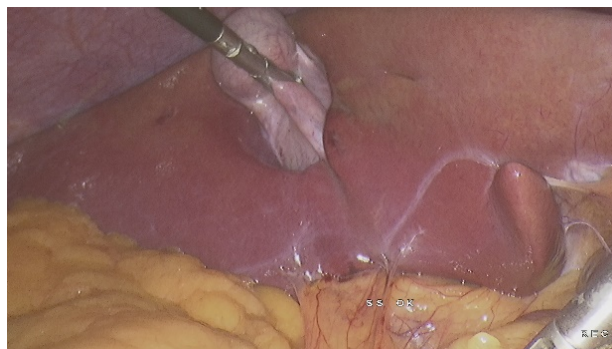


Figure 5. The body, neck, and Calot's triangle of the gallbladder are completely encased in liver tissue

图 5. 胆囊体、颈部、Calot 三角被肝组织包裹

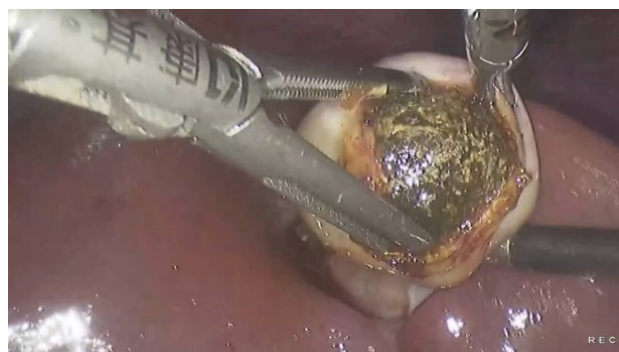


Figure 6. Incision at the base of the gallbladder to remove gallstones

图 6. 经胆囊底切开放石



Figure 7. Flushing and exploration of the gallbladder by choledochoscope

图 7. 胆道镜冲洗、探查

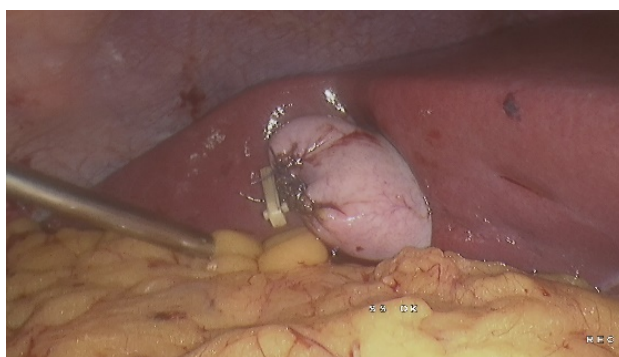


Figure 8. Suture the incision at the base of the gallbladder

图 8. 缝合胆囊底切口

3. 讨论

在人类妊娠第 3 周中期远端前肠发育出一个突起，即肝憩室，肝憩室在第 4 周可分为肝部和囊部两部分，肝部发育为肝脏和肝内胆管；囊部最终形成胆囊、胆囊管和胆总管[10]-[12]。在有袋动物和爬行动物中，胆囊位于肝内[13]。而在人类中，胆囊最初位于肝内，并在胚胎发育的第 8 周后，逐渐移至肝脏 IVb、V 段下缘的胆囊窝内[14] [15]。如胚胎期胆囊未能移至肝左叶和肝右叶之间的肝外，完全或部分被肝脏组织包裹则形成肝内胆囊。根据文献可将肝内胆囊分为：中央型、浅表型、边缘型[15]。中央型肝内胆囊完全位于肝内，胆囊管开口于肝内，在肝脏表面无明显胆囊显露；浅表型虽胆囊完全位于肝内，但在肝脏表面可见胆囊底部或囊样突起，胆囊管开口于肝内或肝外；边缘型肝内胆囊体位于肝实质边缘部，胆囊底、胆囊颈或胆囊管直接暴露在肝外；其中中央型、浅表型尤其少见[15] [16]。肝内胆囊由于胆囊被肝脏实质完全或部分包裹，一定程度上限制了胆囊排空，增加了胆汁淤积、胆囊结石等胆囊病变发生的风险。

肝内胆囊无特异性症状，且很少引起症状，部分可在 CT、超声、MRI 表现为囊肿样或坏死囊变的转移灶或局灶性缺损[17]-[19]，多在术中被发现。目前，对于肝内胆囊合并胆囊结石的治疗还没有共识，对于部分无症状的肝内胆囊结石，一般认为无需特殊处理，仅作为生理性解剖结构变异。对于有症状的肝内胆囊合并胆囊结石，可能会出现严重的并发症，主要表现为胆绞痛、急性胆囊炎、梗阻性黄疸、胆囊结石、肝脓肿甚至肝内胆囊破裂、脓毒性休克[20]-[22]等，均需要采取手术治疗。肝内胆囊合并胆囊结石往往在肝内位置各异，Calot 三角的解剖关系不尽相同，因此难以形成固定的手术方式，这就需要外科医生在术前尽可能描绘胆道结构，熟悉常见的胆囊解剖变异[23]。

根据文献检索,我们发现被证实安全有效的手术方式至少包括以下几种:胆囊穿刺引流、腹腔镜胆囊切除术(LC)、胆囊切开取石术、Kocher 切口开腹胆囊切除术、肝切开术等。有报道几例边缘型肝内胆囊、胆囊大量结石、合并胆囊萎缩、胆囊癌的患者在传统 Kocher 切口开腹行切开肝脏后胆囊切除术[24]-[27]; 1 例盆腔异位肝脏合并肝内胆囊结石成功在中线开腹实施了肝切开术联合胆囊切除术[28]; 而胆囊颈显露的肝内胆囊采取了 LC 术[9] [29]; 分离深嵌肝脏的胆囊容易引起肝脏大出血,胆囊切开取石术相对是一种更为安全有效的方式,对于胆囊结石较小、数量较多,部分人认为可以通过胆囊切开取石术联合 T 管引流预防残余结石导致的复发,也有主张将空肠环形吻合在胆囊切开取石后的切口,防止残余结石可能的同时,也可作为以后胆管结石内镜下取石的有效通道[6]; Schmammann 报道了 1 例肝内胆囊并发胆总管结石的病例证明了经肝穿刺引流联合胆总管取石术的可实施性[13]; 也有报道腹腔镜联合胆道镜保胆取石术应用于被肝桥覆盖的边缘型肝内胆囊,避免了胆囊切除术后综合征发生的同时保留了胆囊功能[30]。本例患者由于胆囊内单一较大结石,胆囊底位于肝右叶距肝缘较高的位置,肝门位置包裹紧密,如切开肝脏则会导致手术出血量不可控。倘若不破坏肝脏的情况下,完全剥离胆囊势必会增加胆管损伤风险,且胆囊取出后遗留的肝右叶空洞也会有内疝的风险[12],因此腹腔镜联合胆道镜保胆取石被作为手术的最优选择。然而,该治疗方案也有一定局限性,主要包括以下三个方面:其一,对于胆囊底深埋肝脏实质中央的中央型肝内胆囊结石者,由于解剖结构复杂,视野显露困难,考虑无法完全清除结石或术后胆瘘风险较大,不宜实施胆囊切开取石,边缘型肝内胆囊则可直接行胆囊切除术,杜绝术后复发风险;其二,如存在多发性胆囊结石、合并胆囊息肉、Mirizzi 综合征,或术中可见胆囊壁附着大量胆固醇结晶,鉴于术后结石复发风险较高,建议行胆囊切除术。其三,术中见胆囊瓷化、萎缩,考虑胆囊功能丧失及潜在恶变风险者,仍视为保留胆囊的禁忌症。

4. 结论

本文报告的浅表型肝内胆囊,其胆囊体、Calot 三角完全深埋肝脏,仅在肝右叶中可见胆囊底,并最终成功实施腹腔镜联合胆道镜保胆取石术。鉴于影响肝内胆囊手术方式的相关因素较多,如肝内异位位置、结石大小、数量以及患者基础疾病等,因此在肝内胆囊手术中更需要强调个性化手术方案。对于肝内胆囊,在选择腹腔镜胆囊切除术时,术前应尽可能了解其位置结构关系,对于术前漏诊的,术中应注意精细分离,避免医源性损伤。对于胆囊体、胆囊三角被肝脏完全包绕,肝脏表面仅可见胆囊底或囊样突出的浅表型肝内胆囊病例,在胆囊底行切开取石术联合胆道镜经胆囊底部切口取石探查可一定程度上降低肝脏断端胆漏及出血的风险。随着腹腔镜联合胆道镜技术在胆管结石应用中的成熟,因此本例报告将其运用于浅表型肝内胆囊也可为今后肝内胆囊的手术治疗提供参考。

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参考文献

- [1] Ploneda-Valencia, C.F., Gallo-Morales, M., Rinchon, C., Navarro-Muñiz, E., Bautista-López, C.A., de la Cerda-Trujillo, L.F., et al. (2017) Gallstone Ileus: An Overview of the Literature. *Revista de Gastroenterología de México (English Edition)*, **82**, 248-254. <https://doi.org/10.1016/j.rgmexen.2017.05.001>
- [2] Chang, L., Chang, M., Chang, H.M., Chang, A.I. and Chang, F. (2018) Clinical and Radiological Diagnosis of Gallstone Ileus: A Mini Review. *Emergency Radiology*, **25**, 189-196. <https://doi.org/10.1007/s10140-017-1568-5>

- [3] Hernandez, F. (2023) Intrahepatic Gallbladder Associated with Fitz-HughCurtis Syndrome: A Case Report. *American Journal of Biomedical Science & Research*, **18**, 24-26.
- [4] Chandrasekar, G. and Nagappa, V. (2017) Cholelithiasis in an Intrahepatic Gallbladder. *International Surgery Journal*, **4**, 3177-3179. <https://doi.org/10.18203/2349-2902.isj20173912>
- [5] Falk, V., Low, G., Bigam, D. and Sandha, G. (2018) Acute Acalculous Cholecystitis of an Intrahepatic Gallbladder Causing Mirizzi's Syndrome. *BMJ Case Reports*, **2018**, bcr-2018-224365. <https://doi.org/10.1136/bcr-2018-224365>
- [6] Dai, X. (2013) Gallstone Ileus: Case Report and Literature Review. *World Journal of Gastroenterology*, **19**, 5586-5589. <https://doi.org/10.3748/wjg.v19.i33.5586>
- [7] Bharathy, K.G.S., Borle, D. and Kumar, N. (2017) Acute Calculous Cholecystitis with Intrahepatic Gallbladder Perforation. *JAMA Surgery*, **152**, 403-404. <https://doi.org/10.1001/jamasurg.2016.5544>
- [8] Nuño-Guzmán, C.M. (2016) Gallstone Ileus, Clinical Presentation, Diagnostic and Treatment Approach. *World Journal of Gastrointestinal Surgery*, **8**, 65-76. <https://doi.org/10.4240/wjgs.v8.i1.65>
- [9] Ploneda-Valencia, C.F., Sainz-Escárrega, V.H., Gallo-Morales, M., Navarro-Muñiz, E., Bautista-López, C.A., Valenzuela-Pérez, J.A., et al. (2015) Karewsky Syndrome: A Case Report and Review of the Literature. *International Journal of Surgery Case Reports*, **12**, 143-145. <https://doi.org/10.1016/j.ijscr.2015.05.034>
- [10] Abou-Khalil, J.E. and Bertens, K.A. (2019) Embryology, Anatomy, and Imaging of the Biliary Tree. *Surgical Clinics of North America*, **99**, 163-174. <https://doi.org/10.1016/j.suc.2018.12.005>
- [11] Ando, H. (2010) Embryology of the Biliary Tract. *Digestive Surgery*, **27**, 87-89. <https://doi.org/10.1159/000286463>
- [12] Bridges, K., Vemulapalli, P., O'Driscoll, K., Han, J., Sexton, J. and Gilchrist, B. (2023) The First Ever Described Transhepatic Gallbladder. *SVOA Medical Research*, **1**, 12-16. <https://doi.org/10.58624/svoamr.2023.01.003>
- [13] Taha, A. and Hassan, N. (2025) Post-Cholecystectomy Gallstone Ileus: A Narrative Review. *Cureus*, **17**, e81631. <https://doi.org/10.7759/cureus.81631>
- [14] Rabeea, H., Rashid, M., Rehman, A.K., et al. (2022) Intrahepatic Gallbladder: A Case Report. *Life and Science*, **3**, Article 3. <https://doi.org/10.37185/lms.1.1.231>
- [15] 孙凡淇, 许英晨. 胆石性肠梗阻 1 例并文献复习[J]. 中国现代医生, 2023, 61(34): 125-128.
- [16] Chuah, P.S., Curtis, J., Misra, N., Hikmat, D. and Chawla, S. (2017) Pictorial Review: The Pearls and Pitfalls of the Radiological Manifestations of Gallstone Ileus. *Abdominal Radiology*, **42**, 1169-1175. <https://doi.org/10.1007/s00261-016-0996-0>
- [17] Helmy, N.A. and Ryska, O. (2023) Gallstone Ileus Post-Cholecystectomy: A Case Review. *Cureus*, **15**, e33345. <https://doi.org/10.7759/cureus.33345>
- [18] Kalu, U., Ansari, A., Maheshwari, G. and Joshi, S. (2025) Double Large Gallstones Ileus: An Unusual Cause of Mechanical Large Bowel Obstruction. *Cureus*, **17**, e81020. <https://doi.org/10.7759/cureus.81020>
- [19] Beuran, M. and Ivanov Iventer, M.D. (2010) Gallstone Ileus—Clinical and Therapeutic Aspects. *Journal of Medicine and Life*, **3**, 365-371.
- [20] Lee, H.G., Hwang, S., Joo, Y., Cho, Y. and Choi, K. (2015) Gallstone Ileus Inducing Obstructive Jaundice at the Afferent Loop of Roux-en-Y Hepaticojejunostomy after Bile Duct Cancer Surgery: A Case Report. *Korean Journal of Hepato-Biliary-Pancreatic Surgery*, **19**, 78-81. <https://doi.org/10.14701/kjhbps.2015.19.2.78>
- [21] Al-Tarakji, M., AlFkey, R., Aljohary, H., Sameer, M. and Muhammad Ali, S. (2021) Successful Surgical Management of Unusual Gallbladder Anatomy through Laparoscopic Cholecystectomy of Ectopic Gallbladder. *Cureus*, **13**, e19884. <https://doi.org/10.7759/cureus.19884>
- [22] Doudakmanis, C., Dimeas, G., Dimeas, I.E., Pitsilka, M.M. and Daniil, Z. (2023) Intrahepatic Gallbladder Rupture and Biloma Mimicking Pulmonary Embolism Following Orthopedic Surgery. *Cureus*, **15**, e46905. <https://doi.org/10.7759/cureus.46905>
- [23] Goyal, A. and Srivastava, A. (2008) Gallstone Ileus Following Endoscopic Retrograde Cholangiopancreatography and Sphincterotomy: A Case Report. *Journal of Medical Case Reports*, **2**, Article No. 342. <https://doi.org/10.1186/1752-1947-2-342>
- [24] Monib, S., Mahapatra, P. and Fayez, H. (2019) Intrahepatic Gallbladder. *European Journal of Case Reports in Internal Medicine*, **6**, 1-3. https://doi.org/10.12890/2019_001123
- [25] Nakamoto, Y., Saga, T., Fujishiro, S., Washida, M., Churiki, M. and Matsuda, K. (1998) Gallstone Ileus with Impaction at the Neck of a Meckel's Diverticulum. *The British Journal of Radiology*, **71**, 1320-1322. <https://doi.org/10.1259/bjr.71.852.10319010>
- [26] Aliniagerdroudbari, E., Ershadinia, N., Bagherpor, G. and Babaniamansour, S. (2020) A Rare Case of Simultaneous Intrahepatic and Porcelain Gallbladder: Case Report. *International Medical Case Reports Journal*, **15**, 271-274.

-
- [27] Chilana, A.S., Singh, P.K. and Bhattacharya, K. (2023) Intrahepatic Gallbladder Mimicking as “Hernia of the Gallbladder”. *Indian Journal of Surgery*, **85**, 1308-1308. <https://doi.org/10.1007/s12262-023-03709-z>
- [28] Mathis, R., Stodghill, J., Shaver, T. and Younan, G. (2017) Cholecystectomy of an Intrahepatic Gallbladder in an Ectopic Pelvic Liver: A Case Report and Review of the Literature. *Case Reports in Surgery*, **2017**, 1-5. <https://doi.org/10.1155/2017/3568768>
- [29] Ramos, G.P. and Chiang, N. (2018) Bouveret’s Syndrome. *New England Journal of Medicine*, **378**, 1335. <https://doi.org/10.1056/nejmicm1711592>
- [30] Dong, Z.W., Min, Q.Q., Zeng, Q.T., *et al.* (2021) Laparoscopic and Choledochoscopic Gallbladder-Preserving Cholecystolithotomy for an Intrahepatic Gallbladder with Cholecystolithiasis: A Case Report. *Asian Journal of Surgery*, **44**, 1182-1183. <https://doi.org/10.1016/j.asjsur.2021.05.049>