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W J C C World Journal of Clinical Cases

Contents

Thrice Monthly Volume 10 Number 19 July 6, 2022

MINIREVIEWS

6341 Review of clinical characteristics, immune responses and regulatory mechanisms of hepatitis E-associated liver failure

Chen C, Zhang SY, Chen L

6349 Current guidelines for Helicobacter pylori treatment in East Asia 2022: Differences among China, Japan, and South Korea

Cho JH, Jin SY

6360 Review of epidermal growth factor receptor-tyrosine kinase inhibitors administration to non-small-cell lung cancer patients undergoing hemodialysis

Lan CC, Hsieh PC, Huang CY, Yang MC, Su WL, Wu CW, Wu YK

ORIGINAL ARTICLE

Case Control Study

Pregnancy-related psychopathology: A comparison between pre-COVID-19 and COVID-19-related social 6370 restriction periods

Chieffo D, Avallone C, Serio A, Kotzalidis GD, Balocchi M, De Luca I, Hirsch D, Gonsalez del Castillo A, Lanzotti P, Marano G, Rinaldi L, Lanzone A, Mercuri E, Mazza M, Sani G

6385 Intestinal mucosal barrier in functional constipation: Dose it change? Wang JK, Wei W, Zhao DY, Wang HF, Zhang YL, Lei JP, Yao SK

Retrospective Cohort Study

6399 Identification of risk factors for surgical site infection after type II and type III tibial pilon fracture surgery Hu H, Zhang J, Xie XG, Dai YK, Huang X

Retrospective Study

6406 Total knee arthroplasty in Ranawat II valgus deformity with enlarged femoral valgus cut angle: A new technique to achieve balanced gap

Lv SJ, Wang XJ, Huang JF, Mao Q, He BJ, Tong PJ

- 6417 Preliminary evidence in treatment of eosinophilic gastroenteritis in children: A case series Chen Y, Sun M
- 6428 Self-made wire loop snare successfully treats gastric persimmon stone under endoscopy Xu W, Liu XB, Li SB, Deng WP, Tong Q
- 6437 Neoadjuvant transcatheter arterial chemoembolization and systemic chemotherapy for the treatment of undifferentiated embryonal sarcoma of the liver in children

He M, Cai JB, Lai C, Mao JQ, Xiong JN, Guan ZH, Li LJ, Shu Q, Ying MD, Wang JH



| Conter | | | | |
|--------|--|--|--|--|
| | Thrice Monthly Volume 10 Number 19 July 6, 2022 | | | |
| 6446 | Effect of cold snare polypectomy for small colorectal polyps | | | |
| | Meng QQ, Rao M, Gao PJ | | | |
| 6456 | Field evaluation of COVID-19 rapid antigen test: Are rapid antigen tests less reliable among the elderly? | | | |
| | Tabain I, Cucevic D, Skreb N, Mrzljak A, Ferencak I, Hruskar Z, Misic A, Kuzle J, Skoda AM, Jankovic H, Vilibic-Cavlek T | | | |
| | Observational Study | | | |
| 6464 | Observational Study Tracheobronchial intubation using flexible bronchoscopy in children with Pierre Robin sequence: Nursing | | | |
| 0404 | considerations for complications | | | |
| | Ye YL, Zhang CF, Xu LZ, Fan HF, Peng JZ, Lu G, Hu XY | | | |
| 6472 | Family relationship of nurses in COVID-19 pandemic: A qualitative study | | | |
| | Çelik MY, Kiliç M | | | |
| | | | | |
| | META-ANALYSIS | | | |
| 6483 | Diagnostic accuracy of \geq 16-slice spiral computed tomography for local staging of colon cancer: A systematic review and meta-analysis | | | |
| | Liu D, Sun LM, Liang JH, Song L, Liu XP | | | |
| | | | | |
| | CASE REPORT | | | |
| 6496 | Delayed-onset endophthalmitis associated with <i>Achromobacter</i> species developed in acute form several | | | |
| | months after cataract surgery: Three case reports <i>Kim TH, Lee SJ, Nam KY</i> | | | |
| | | | | |
| 6501 | Sustained dialysis with misplaced peritoneal dialysis catheter outside peritoneum: A case report | | | |
| | Shen QQ, Behera TR, Chen LL, Attia D, Han F | | | |
| 6507 | Arteriovenous thrombotic events in a patient with advanced lung cancer following bevacizumab plus | | | |
| | chemotherapy: A case report Kong Y, Xu XC, Hong L | | | |
| | Kong I, Au AC, Hong L | | | |
| 6514 | Endoscopic ultrasound radiofrequency ablation of pancreatic insulinoma in elderly patients: Three case reports | | | |
| | Rossi G, Petrone MC, Capurso G, Partelli S, Falconi M, Arcidiacono PG | | | |
| < | | | | |
| 6520 | Acute choroidal involvement in lupus nephritis: A case report and review of literature | | | |
| | Yao Y, Wang HX, Liu LW, Ding YL, Sheng JE, Deng XH, Liu B | | | |
| 6529 | Triple A syndrome-related achalasia treated by per-oral endoscopic myotomy: Three case reports | | | |
| | Liu FC, Feng YL, Yang AM, Guo T | | | |
| 6536 | Choroidal thickening with serous retinal detachment in BRAF/MEK inhibitor-induced uveitis: A case report | | | |
| | Kiraly P, Groznik AL, Valentinčič NV, Mekjavić PJ, Urbančič M, Ocvirk J, Mesti T | | | |
| 6543 | Esophageal granular cell tumor: A case report | | | |
| | Chen YL, Zhou J, Yu HL | | | |
| | | | | |

| C | World Journal of Clinical Cases |
|----------|---|
| Conten | ts Thrice Monthly Volume 10 Number 19 July 6, 2022 |
| 6548 | Hem-o-lok clip migration to the common bile duct after laparoscopic common bile duct exploration: A case report |
| | Liu DR, Wu JH, Shi JT, Zhu HB, Li C |
| 6555 | Chidamide and sintilimab combination in diffuse large B-cell lymphoma progressing after chimeric antigen receptor T therapy |
| | Hao YY, Chen PP, Yuan XG, Zhao AQ, Liang Y, Liu H, Qian WB |
| 6563 | Relapsing polychondritis with isolated tracheobronchial involvement complicated with Sjogren's syndrome: A case report |
| | Chen JY, Li XY, Zong C |
| 6571 | Acute methanol poisoning with bilateral diffuse cerebral hemorrhage: A case report |
| | Li J, Feng ZJ, Liu L, Ma YJ |
| 6580 | Immunoadsorption therapy for Klinefelter syndrome with antiphospholipid syndrome in a patient: A case report |
| | Song Y, Xiao YZ, Wang C, Du R |
| 6587 | Roxadustat for treatment of anemia in a cancer patient with end-stage renal disease: A case report |
| | Zhou QQ, Li J, Liu B, Wang CL |
| 6595 | Imaging-based diagnosis for extraskeletal Ewing sarcoma in pediatrics: A case report |
| | Chen ZH, Guo HQ, Chen JJ, Zhang Y, Zhao L |
| 6602 | Unusual course of congenital complete heart block in an adult: A case report |
| | Su LN, Wu MY, Cui YX, Lee CY, Song JX, Chen H |
| 6609 | Penile metastasis from rectal carcinoma: A case report |
| | Sun JJ, Zhang SY, Tian JJ, Jin BY |
| 6617 | Isolated cryptococcal osteomyelitis of the ulna in an immunocompetent patient: A case report |
| | Ma JL, Liao L, Wan T, Yang FC |
| 6626 | Magnetic resonance imaging features of intrahepatic extramedullary hematopoiesis: Three case reports |
| | Luo M, Chen JW, Xie CM |
| 6636 | Giant retroperitoneal liposarcoma treated with radical conservative surgery: A case report and review of literature |
| | Lieto E, Cardella F, Erario S, Del Sorbo G, Reginelli A, Galizia G, Urraro F, Panarese I, Auricchio A |
| 6647 | Transplanted kidney loss during colorectal cancer chemotherapy: A case report |
| | Pośpiech M, Kolonko A, Nieszporek T, Kozak S, Kozaczka A, Karkoszka H, Winder M, Chudek J |
| 6656 | Massive gastrointestinal bleeding after endoscopic rubber band ligation of internal hemorrhoids: A case report |
| | Jiang YD, Liu Y, Wu JD, Li GP, Liu J, Hou XH, Song J |



| World Journal of Clinical Cases | | |
|---------------------------------|--|--|
| Conter | nts Thrice Monthly Volume 10 Number 19 July 6, 2022 | |
| 6664 | Mills' syndrome is a unique entity of upper motor neuron disease with N-shaped progression: Three case reports Zhang ZY, Ouyang ZY, Zhao GH, Fang JJ | |
| 6672 | Entire process of electrocardiogram recording of Wellens syndrome: A case report <i>Tang N, Li YH, Kang L, Li R, Chu QM</i> | |
| 6679 | Retroperitoneal tumor finally diagnosed as a bronchogenic cyst: A case report and review of literature <i>Gong YY, Qian X, Liang B, Jiang MD, Liu J, Tao X, Luo J, Liu HJ, Feng YG</i> | |
| 6688 | Successful treatment of Morbihan disease with total glucosides of paeony: A case report <i>Zhou LF, Lu R</i> | |
| 6695 | Ant sting-induced whole-body pustules in an inebriated male: A case report | |
| | Chen SQ, Yang T, Lan LF, Chen XM, Huang DB, Zeng ZL, Ye XY, Wan CL, Li LN | |
| 6702 | Plastic surgery for giant metastatic endometrioid adenocarcinoma in the abdominal wall: A case report and review of literature | |
| | Wang JY, Wang ZQ, Liang SC, Li GX, Shi JL, Wang JL | |
| 6710 | Delayed-release oral mesalamine tablet mimicking a small jejunal gastrointestinal stromal tumor: A case report | |
| | Frosio F, Rausa E, Marra P, Boutron-Ruault MC, Lucianetti A | |
| 6716 | Concurrent alcoholic cirrhosis and malignant peritoneal mesothelioma in a patient: A case report <i>Liu L, Zhu XY, Zong WJ, Chu CL, Zhu JY, Shen XJ</i> | |
| 6722 | Two smoking-related lesions in the same pulmonary lobe of squamous cell carcinoma and pulmonary Langerhans cell histiocytosis: A case report | |
| | Gencer A, Ozcibik G, Karakas FG, Sarbay I, Batur S, Borekci S, Turna A | |
| 6728 | Proprotein convertase subtilisin/kexin type 9 inhibitor non responses in an adult with a history of coronary revascularization: A case report | |
| | Yang L, Xiao YY, Shao L, Ouyang CS, Hu Y, Li B, Lei LF, Wang H | |
| 6736 | Multimodal imaging study of lipemia retinalis with diabetic retinopathy: A case report | |
| | Zhang SJ, Yan ZY, Yuan LF, Wang YH, Wang LF | |
| 6744 | Primary squamous cell carcinoma of the liver: A case report | |
| | Kang LM, Yu DP, Zheng Y, Zhou YH | |
| 6750 | Tumor-to-tumor metastasis of clear cell renal cell carcinoma to contralateral synchronous pheochromocytoma: A case report | |
| | Wen HY, Hou J, Zeng H, Zhou Q, Chen N | |
| | | |



Contents

Thrice Monthly Volume 10 Number 19 July 6, 2022

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WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

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CASE REPORT

Primary squamous cell carcinoma of the liver: A case report

Li-Min Kang, Di-Ping Yu, Yong Zheng, Ya-Hao Zhou

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Abstract

BACKGROUND

Squamous cell carcinoma (SCC) of the liver is rare, and is more commonly found in the skin, rectum, cervical or inguinal lymph nodes.

CASE SUMMARY

A 73-year-old man had been experiencing right upper quadrant discomfort for some weeks. He had a 50-year history of smoking and drinking. On average, he smoked 20 cigarettes and consumed 200 galcoholdaily. He didn't have a history of hepatitis or surgery. Fever, vomiting, jaundice, dysuria, chills, and abdominal distention were not observed at the time of admission. Tenderness in the right upper quadrant was found on physical examination, but there was no palpable abdominal mass. No obvious abnormalities in laboratory tests and tumor markers were found. The plasma retention rate of indocyanine green (ICG) at 15 min was 1.35%. Subsequent abdominal ultrasonography showed a mixed echoic mass approximately 3.8 cm diameter in the left caudate lobe of the liver. Abdominal computed tomography confirmed a 3.0 cm × 3.5 cm irregular mass with inhomogeneous density and moderate delayed enhancement in the left caudate lobe of the liver. Laparoscopic left caudate lobectomy was performed to remove the liver mass. Intra-operative findings confirmed a non-cirrhotic liver, with a 3 cm × 3.5 cm white tumor mass in the left caudate lobe with no tumor rupture and no hemoperitoneum. The resection margin was 1.0 cm in width.

CONCLUSION

We describe the first case of SCC in the left caudate lobe of the liver, which was successfully treated by surgical resection and postoperative immunotherapy. No tumor recurrence was observed during the 8-mo follow-up.

Key Words: Squamous cell carcinoma; Liver; Left caudate lobe; Immunotherapy; Case report



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Core Tip: Primary squamous cell carcinoma (SCC) of the liver is very rare. Here we report the first case of SCC of the left caudate liver lobe successfully treated by laparoscopic hepatectomy. The patient refused to undergo systemic chemotherapy, and received immunotherapy, and the disease-free survival was 8 mo. However, there is no available literature on the effectiveness of immunotherapy in this disease, and this requires further study.

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INTRODUCTION

Squamous cell carcinoma (SCC) of the liver is rare, and is more commonly found in the skin, rectum, cervical or inguinal lymph nodes. It accounts for 4%-5% of cancers with unclear primary locations[1]. However, there have been a total of 31 similar occurrences described in the literature^[2]. Hepatic teratoma, hepatic cyst, and hepatolithiasis have all been linked to primary SCC of the liver. Poorly differentiated SCC of the liver can be completely cured with systemic chemotherapy and surgery, and it also responds to hepatic arterial injections of low-dose chemotherapeutic agents [3,4]. We present the first case of primary SCC in the left caudate liver lobe which was successfully resected with an 8 mo disease-free survival. To our knowledge, 31 cases of primary SCC of the liver have been reported. Here, we here describe a case of left liver caudate lobe SCC which was treated successfully by surgical resection, with a disease-free survival of 8 mo.

CASE PRESENTATION

Chief complaints

Before his admission in June 2021, the 73-year-old man had been experiencing right upper quadrant discomfort for some weeks.

History of present illness

The patient's symptoms started some weeks ago with recurrent right upper quadrant discomfort. There was no obvious aggravation of symptoms.

History of past illness

The patient had a 50-year history of smoking and drinking. On average, he smoked 20 cigarettes and consumed 200 g alcohol daily. He didn't have a history of hepatitis or surgery.

Physical examination

No fever, vomiting, jaundice, dysuria, chills, or abdominal distention were observed at the time of admission. Tenderness in the right upper quadrant was found on physical examination, but no palpable abdominal mass was identified.

Laboratory examinations

Laboratory test results were as follows: hemoglobin 12.8 g/dL; white blood cell count 12100/mm³; platelet count 21000/µL; prothrombin time 10.7/11.2 s; international normalized ratio 1.43; albumin 3.7 g/dL; direct bilirubin 0.32 mg/dL; complete bilirubin 0.57 mg/dL; aspartate aminotransferase 24 IU/L; alanine aminotransferase 3 IU/L; alkaline phosphatase 113 U/L; blood urea nitrogen 12 mg/dL; creatinine 1.1 mg/dL; sodium 136 meq/L; potassium 3.8 meq/L. The serum level of carcinoembryonic antigen (CEA) was < 5 ng/mL, alpha-fetoprotein was < 10 ng/mL, and carbohydrate antigen 19-9 was < 34 U/mL, which had previously been 2.05 ng/mL, < 3 ng/mL, and 4.78 U/mL, respectively. Urine analysis was normal. Electrocardiogram, chest x-ray and arterial blood gas was also normal.

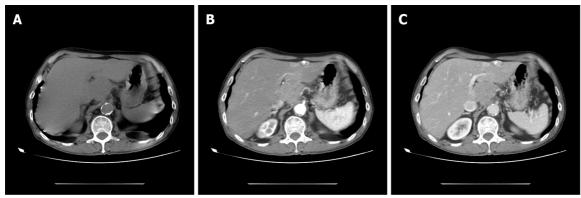
Imaging examinations

Subsequent abdominal ultrasonography showed a mixed echoic mass approximately 3.8 cm diameter in



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Kang LM et al. Primary squamous cell carcinoma of the liver



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Figure 1 Abdominal computed tomography shows a 3.0 cm x 3.5 cm irregular tumor, with uneven density, and mild enhancement in the arterial phase in the left caudate lobe. A: Preoperative computed tomography (CT) plain scan period; B: Preoperative CT arterial phase; C: Preoperative CT venous phase.

the left caudate lobe of the liver. Abdominal computed tomography (CT) confirmed an irregular mass 3.0 cm × 3.5 cm in size with inhomogeneous density and moderate delayed enhancement in the left caudate liver lobe (Figure 1). The patient was unable to undergo magnetic resonance examination as he had difficulty holding his breath.

FINAL DIAGNOSIS

According to the postoperative pathological results, the final diagnosis in this patient was primary SCC of the liver.

TREATMENT

In June 2021, the patient underwent laparoscopic left caudate lobectomy to remove the liver mass. Intraoperative findings confirmed a non-cirrhotic liver with a 3 cm × 3.5 cm white tumor mass with no tumor rupture and no hemoperitoneum. The resection margin was 1.0 cm in width (Figure 2).

OUTCOME AND FOLLOW-UP

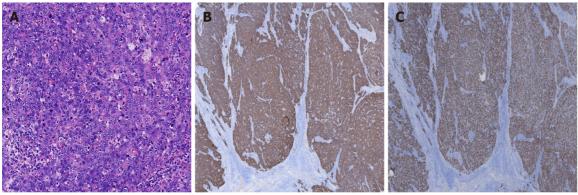
Histopathological examination confirmed a moderately differentiated SCC of the liver composed of non-keratinized squamous cells (Figure 3A). SCC of the liver had the pathological characteristics of different sized cancer cells, nest-like in appearance, intercellular bridges, large and deep staining nuclei, a mitotic phase, abundant cytoplasm, dichroism, incomplete keratosis of cancer cells, the formation of keratotic beads, and no adenoid carcinoma tissue. According to previous research, immunohistochemistry is often positive for cytokeratin (CK) 10, CK14, CK19 and CEA[5]. We used the immunohistochemical Envision two-step method for further examination of liver samples. Immunohistochemistry revealed positivity for CK5/6 (mouse anti-human monoclonal antibody, Fuzhou Maixin Biotech., Co., Ltd), P40 (rabbit anti-human monoclonal antibody, Fuzhou Maixin Biotech., Co., Ltd) (Figure 3B and C), and occasional positivity for Ki-67 (90%) (mouse anti-human monoclonal antibody, Fuzhou Maixin Biotech., Co., Ltd). However negativity for thyroid transcription CD34, Arg-1, CPS1, and Syn indicated a SCC of the liver. Subsequent gastroscopy showed that the esophagus and stomach were normal. The results of postoperative pathological examination showed a primary hepatic SCC. We doubted that this tumor was a metastatic tumor from the skin, nasopharynx, lung or gastrointestinal tract, and the patient underwent further physical examination, CT of the brain, nasopharynx and chest, in addition to gastroscopy and enteroscopy. These tests were negative. Limited by hospital conditions, we were unable to perform a positron emission tomography-CT examination. The patient refused systemic chemotherapy, and was treated witha 3 wk regimen of immunotherapy consisting of 200 mg xindilimab (Daboshu) injections [Xinda Biopharmaceutical (Suzhou) Co., Ltd.]. His postoperative course was uneventful and no tumor recurrence or distant metastasis developed during the 8mo follow-up period (Figure 4).

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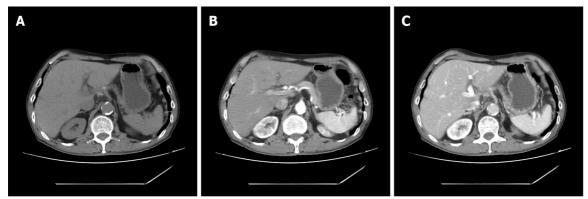
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Figure 2 Gross features of the hepatic tumor.



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Figure 3 Pathologic characteristics of the resected liver tumor. A: The tumor was composed of non-keratinized squamous cells with some keratinization (HE x 200); B: Immunohistochemical findings (IHC x 200); C: Squamous cells expressing strong positive P40 staining (IHC x 200).



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Figure 4 Computed tomography showed no tumor recurrence or metastasis at the resection site. A: Postoperative computed tomography (CT) plain scan period; B: Postoperative CT arterial phase; C: Postoperative CT venous phase.

DISCUSSION

Primary SCC of the liver is very rare. It has been stated that primary SCC of the liver is caused by chronic inflammation of bile duct epithelium or the formation of a hepatic cyst with subsequent malignant transformation[6-8]; however, the underlying mechanism is still unclear.

Here, we report the first case of SCC in the left caudate lobe of the liver, with a solitary solid tumor without parasitic infection, which was successfully treated by laparoscopic hepatectomy. Pathological examination of the tumor showed moderately differentiated SCC composed of squamous cells without



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keratinization. Positive staining of acidic CK5/6 indicated basal cells of non-keratinized squamous epithelium and the beginning of cancer cells. Strong positivity of P40 suggested possible lung cancer; however, chest CT examinations were negative. Clinically, panendoscopy, chest CT, and ENT examination revealed negative results in this case. Taken together, these findings indicated primary SCC of the liver.

The prognosis of primary SCC of the liver is dismal with a survival of less than one year, as the tumor is typically recognized late[9]. Complete remission of poorly differentiated SCC after systemic chemotherapy (cisplatin and 5-fluorouracil) and surgery has been reported [10,11]. If tumor recurrence is found in the late stage, reoperation, systemic chemotherapy or hepatic artery infusion chemotherapy are considered treatment options[4]. However, in the present case, as the patient refused systemic chemotherapy, he received immunotherapy, and the disease-free survival was 8 mo. However, there is no available literature on the effectiveness of immunotherapy for this disease, and this requires further study.

CONCLUSION

We describe the first case of SCC in the left caudate lobe of the liver, which was successfully managed by surgical resection. The patient was also treated with continuous postoperative immunotherapy and disease-free survival was 8 mo. Further research on the treatment and prognosis of primary SCC of the liver is required.

FOOTNOTES

Author contributions: Kang LM, Zheng Y and Zhou YH collected the clinical data; and Kang LM and Yu DP analyzed the data and wrote the paper.

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