AG-2022-3
doi.org/10.1590/S0004-2803.202202000-58

Cholangioscopy in a post-Covid-19 cholangiopathy patient

Tomazo Antonio Prince **FRANZINI**[1], Mayra Machado Fleury **GUEDES**[2], Haroldo Luis Oliva Gomes **ROCHA**[2], Carlos Aristides **FLEURY**[2], Alexandre Moraes **BESTETTI**[1] and Eduardo Guimarães Horneaux de **MOURA**[1]

Received: 4 January 2022
Accepted: 18 January 2022

Main text

Acute liver chemistry elevations occur frequently in patients with coronavirus disease 2019 (COVID-19)[(1)]. An unusual condition of secondary sclerosing cholangitis in critically ill patients has been recognized as a novel entity after COVID-19 infection[(2)] and recently named post-COVID-19 cholangiopathy. It is characterized by marked cholestasis associated with ongoing jaundice that persists long after pulmonary and renal recovery[(3)]. This E-VIDEO describes a SpyGlass® cholangioscopy in a post-Covid-19 cholangiopathy patient.

A 65-year-old men with diabetes, hypertension, and chronic lymphocytic leukemia, under hematologic follow-up, was hospitalized for COVID-19 associated acute respiratory distress syndrome 10 months prior, and underwent mechanical ventilation for 13 days under Fentanyl, Midazolam, and Ketamine sedation. 10 days after hospital admission, he presented progressive increase of canalicular enzymes without transaminases or ultrasound abnormalities. At day 33 he was discharged, and his laboratory bloody tests included alkaline phosphatase of 807, gamma glutamyl transferase of 1831, and total bilirubin of 1.3. 1 month later he presented jaundice and progressive bilirubin increase, being started ursodeoxycholic acid without improvement. Endoscopic retrograde cholangiopancreatography (ERCP) revealed rarefaction of intrahepatic bile ducts (FIGURE 1), and removal of biliary casts (FIGURE 2). Patient did not show improvement of the condition, and cholangioscopy was indicated to endoscopically evaluate the bile duct and verify its viability. The procedure demonstrated scar retraction areas (FIGURE 3), as well as dark endothelial shedding, removed with Spybite®. In the confluence of the hepatic ducts, edema and diffuse ischemic pattern (FIGURE 4) was noted with retractions that cause important stenosis extending to intrahepatic segments (FIGURE 5).

FIGURE 1. Rarefaction of intrahepatic bile ducts.

Declared conflict of interest of all authors: none
Disclosure of funding: no funding received
[1] Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, Unidade de Endoscopia Gastrointestinal, Serviço de Gastroenterologia, São Paulo, SP, Brasil. [2] Hospital de Clínicas da Universidade Federal de Uberlândia, Unidade de Endoscopia, Uberlândia, MG, Brasil.
Corresponding author: Alexandre Moraes Bestetti. Email: bestetti.alexandre@gmail.com
E-VIDEO: https://youtu.be/VP23QI9VDGQ

FIGURE 2. Biliary casts.

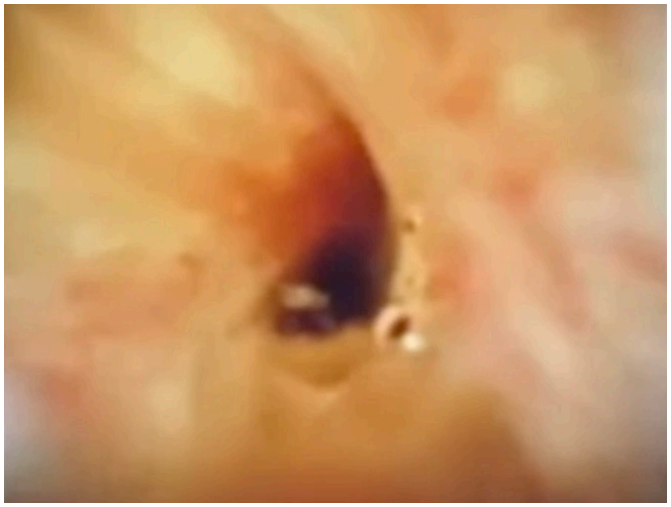

FIGURE 3. Choledochal scars.

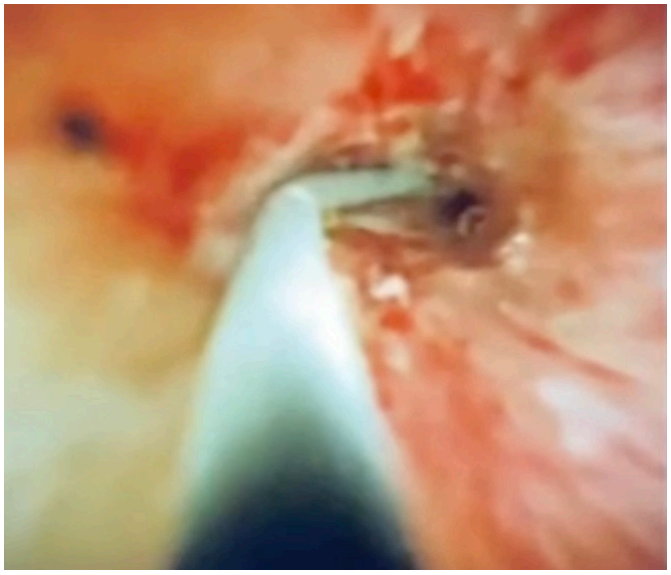

FIGURE 4. Ischemic biliary pattern.

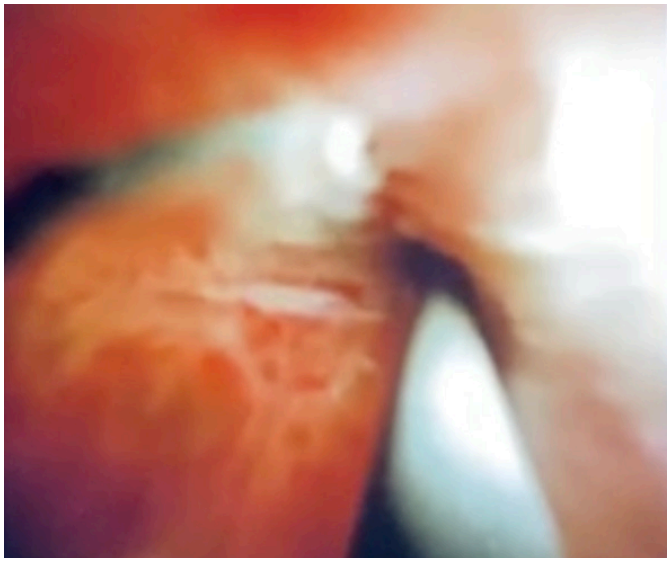

FIGURE 5. Biliary stenosis.

Cholangiopathy is a late complication of severe COVID-19, recently described, with the potential for progressive biliary injury and liver failure that may lead to liver transplantation[4]. This is the first video to demonstrate the bile duct changes trough cholangioscopy and how this procedure may be useful to understand pathogenesis, natural history, disease current status, and determine therapeutic interventions.

Case presentation

- 65-year-old man with diabetes, hypertension and chronic lymphocytic leukemia.
- Hospitalized for COVID-19 associated acute respiratory distress syndrome.
- Underwent mechanical ventilation for 13 days under Fentanyl, Midazolam, and Ketamine sedation.

Case presentation

At day 33 he was discharged with altered laboratory tests.

- Alkaline Phosphatase: 807.
- Gamma Glutamyl transferase: 1831.
- Total bilirubin: 1.3.

1 month later presented jaundice and progressive bilirubin increase, being started ursodeoxycholic acid without improvement.

Case presentation

- ERCP revealed rarefaction of intrahepatic bile ducts, and removal of biliary casts. Biliary casts removal follow-up:
- Patient didn't show improvement.
- Cholangioscopy was indicated to endoscopically evaluate the bile duct and verify its viability.
- Cholangioscopy.
- Diffuse rarefaction of intrahepatic bile ducts.
- Duodenoscope view.
- Colangioscope view.
- Scar retraction areas and endothelial shedding.
- Ischemic pattern.
- Stenotic intrahepatic segment.
- Biliary casts removal.

CONCLUSION

Cholangiopathy is a late complication of severe COVID-19 with the potential for progressive biliary injury and liver failure. This is the first video to demonstrate the bile duct changes trough cholangioscopy and how this procedure may be useful to understand pathogenesis, natural history, disease current status, and determine therapeutic interventions.

Orcid

Tomazo Antônio Prince Franzini: 0000-0002-5477-4939.
Mayra Machado Fleury Guedes: 0000-0003-2954-2156.
Haroldo Luis Oliva Gomes Rocha: 0000-0002-9655-0140.
Carlos Aristides Fleury: 0000-0003-0363-1150.
Alexandre Moraes Bestetti: 0000-0002-5358-2169.
Eduardo G. Hourneaux de Moura: 0000-0002-8023-3722.

Franzini TAP, Guedes MMF, Rocha HLOG, Fleury CA, Bestetti AM, Moura EGH. Colangioscopia em paciente com colangiopatia pós Covid-19. Arq Gastroenterol. 2022;59(2):321-3.

REFERENCES

1. Roth NC, Kim A, Vitkovski T, Xia J, Ramirez G, Bernstein D, Crawford JM. Post-COVID-19 Cholangiopathy: A Novel Entity. Am J Gastroenterol. 2021;116:1077-82.
2. Edwards K, Allison M, Ghuman S. Secondary sclerosing cholangitis in critically ill patients: a rare disease precipitated by severe SARS-CoV-2 infection. BMJ Case Rep. 2020;13:e237984.
3. Durazo FA, Nicholas AA, Mahaffey JJ, Sova S, Evans JJ, Trivella JP, et al. Post-Covid-19 Cholangiopathy-A New Indication for Liver Transplantation: A Case Report. Transplant Proc. 2021;53:1132-7.
4. Aruqui S, Okoli FC, Olsen SK, Feldman DM, Kalia HS, Park JS, et al. Cholangiopathy After Severe COVID-19: Clinical Features and Prognostic Implications. Am J Gastroenterol. 2021;116:1414-25.