



## Gallbladder polyp with small polyp lesion: Case report

### Pólipo de vesícula com lesão em pólipo pequeno: Relato de caso

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**ABSTRACT**

Gallbladder polyp is an elevation of the gallbladder wall that can be classified into different types. Cholesterol polyps are the most common, followed by inflammatory and adenomatous polyps. Polyps are usually asymptomatic, but they can cause abdominal pain, nausea, and other symptoms in some cases. The diagnosis is made by imaging tests, such as abdominal ultrasonography, which is the preferred method due to its accuracy and low cost. Polyps larger than 1 cm, symptomatic or in patients with risk factors, usually require cholecystectomy (removal of the gallbladder). Some polyps can be malignant, such as adenocarcinoma, which is more common in polyps larger than 1cm. Papillary neoplasms of the biliary tract, such as cholangiocarcinoma, may also be associated with vesicular polyps. Management and prognosis depend on the type and characteristics of polyps found. The case report in question brings Videolaparoscopic Cholecystectomy as a treatment choice, based on the benefits and indications of the technique.

**Keywords:** Gallbladder polyp, Etiology, Symptoms, Diagnosis, Treatment.

**1 INTRODUCTION**

A gallbladder polyp (BGP) is an elevation of the gallbladder wall that protrudes into the lumen. The most common type are so-called pseudo or cholesterol polyps, accounting for 60% to 90% of gallbladder polyps. These are formed by precipitation of cholesterol or bile salts, which form projections into the inner lumen of the gallbladder wall. The presence of cholesterol polyps may be indicative of pathological gallbladder disease, such as chronic cholecystitis (WILES et al., 2017). Inflammatory polyps account for 5% to 10% of PV cases and are usually associated with inflammation of the gallbladder mucosa and wall. This type is usually associated with repeated bouts of cholecystitis and acute biliary colic. Both pseudopolyps and inflammatory polyps have a low risk of developing neoplasms. They rarely exceed 1 cm in size and are usually multiple. Adenomatous polyps, known as true polyps, are neoplastic, but are rare and often associated with gallstones. Their size can vary from 5mm to 20mm (JONES et al., 2022).

Studies on gallbladder polyps have shown that there is a higher prevalence among men, usually affected at the age of 40 to 58 years (RIDDELL et al., 2022). However, other literature has shown that the incidence is higher in even older patients, demonstrating that this is a late-onset



disease (JONES et al, 2022). Abdominal ultrasound is the imaging test of choice for the diagnosis of polyps, due to its high specificity and sensitivity, in addition to being low cost and more accessible to the majority of the population. (MARTINHO et al., 2010).

Vesicular polyps (VPs) can be classified according to their physical characteristics: sessile, when they have an enlarged base; and pedunculated, when they are adhered to the mucosa by means of a membranous base. In addition, they can be classified according to their histology into: benign, which can be hyperplastic or metaplastic; and malignant, the latter being the neoplastic form, such as adenomas and carcinomas (ANDREA et al., 2020). For PVs that are classified as malignant, adenocarcinoma accounts for about 85% of cases and are most often diagnosed incidentally on abdominal ultrasound. Studies indicate that a polyp  $\geq 10$  mm is a predictor of malignancy (MEJIA et al., 2021). Adenocarcinoma can be classified histologically into papillary, tubular and mucinous (RUEDA et al., 2017).

Most PVs are asymptomatic. However, some patients with cholesterol stones have reported gallbladder hypofunction, with characteristic symptoms of biliary stasis, abdominal pain, nausea and food intolerance. Patients who have larger adenomatous lesions may consequently experience greater symptoms. These polyps can reach such large sizes that they can be palpated in the abdomen. In addition, Murphy's sign and pain on deep palpation of the cystic point may be present (JONES et al., 2022).

Gallbladder polyps are usually found through imaging tests, such as a CT scan or abdominal ultrasound. Abdominal ultrasound is the ideal examination for the diagnosis of PVs due to the high sensitivity and specificity, with respectively 93% and 95.8%. (MARTINHO et al., 2010) Polyps may present as a single lesion or multiple nature. As well as can be found in the presence or absence of gallstones, being more common its absence. During the examination, differentiation should be made between gallstones and gallbladder polyps. Gallstones are usually mobile and polyps are attached to the wall of the gallbladder lumen. Most polyps are hypodense and smaller than 1 cm in diameter. They may appear in the form of polypoid or sessile. Singular polyps that have a tissue density and are larger than 1 cm in diameter carry a higher malignant potential (JONES et al., 2022).

According to the Brazilian Liver Institute (IBRAFIG), patient management depends on the characteristics of the vesicular polyps and the clinical picture presented. In this sense, lesions equal to or greater than 1cm in diameter should be referred for cholecystectomy, as they have a high risk of progression to gallbladder cancer. However, in symptomatic patients, aged over 50 years or with primary sclerosing cholangitis, cholecystectomy is indicated regardless of the size of the



vesicular polyps. PVs smaller than 1cm and without risk factors, should be followed up through abdominal ultrasound every six months, if size evolution is noted, surgery may be indicated.

Papillary neoplasms of the biliary tract are classified into papillary neoplasm of the bile ducts (NPIDB), neoplasm of the ampullary region and intracolecystic papillary neoplasm. Papillary neoplasia of the bile ducts (NPIDB) is characterized by numerous papillary lesions comprising epithelial cells on a thin fibrovascular axis supported by the connective tissue of the lamina propria. In addition, this form of biliary neoplasm leads to mucin production and is a soft, friable tumor. This neoplasm is a rare type, comprising about 3-9% of cholangiocarcinomas. Therefore, they can be resected and have a more favorable prognosis when compared to other histopathological types of cholangiocarcinomas. In addition, NPIDB has a capacity to extend into the superficial portion of the biliary mucosa and for this reason it is necessary to perform a wide resection of the neoplasm. However, the most crucial characteristics for making the diagnosis of NPIDB is to identify mucobilia, the way in which the bile ducts are distributed and thickened, in addition to the contrast and metabolism of the nodule (RESENDE et al., 2014).

Neoplasms of the ampullary region still lack specific research, so their study is rather limited. These neoplasms are characterized by a spectrum of dysplastic change, exophytic growth and also have a variable intestinal or gastric/pancreatobiliary cell lineage. Their classification to date is divided into conventional adenocarcinomas of the ampulla or as adenomas of the duodenum. These neoplasms are relatively rare worldwide, constituting 33% of primary ampullary tumors and 5.5% of duodenopancreatectomies/ampulectomies. The most common age is 64 years, similar to patients with other cancers of the perampullary region. Intra-ampullary papillotubular neoplasms exhibit a spectrum of dysplasia, with more than 80% of cases presenting a mixture of low-grade and high-grade dysplastic foci in the same lesion. It is important to emphasize that once the neoplastic transformation of the lesion begins, it can progress rapidly, even if detected early (RESENDE et al., 2014).

Intracholecystic papillary neoplasia is a rare entity that is poorly described in the literature, corresponding to 0.4-0.61% of all cholecystectomies. It is similar to intraductal papillary neoplasia of the biliary tract and intraductal papillary tumor of the pancreas lesion, sharing the same histological subtypes (pancreatobiliary, intestinal, gastric and oncocytic). It is an intraluminal lesion with exophytic growth, premalignant and associated with progression to carcinoma in more than 50% of cases. Patients are often asymptomatic, although up to half present with abdominal pain and 20% have concomitant cholelithiasis. Abdominal ultrasound is the main radiological examination that describes the papillary lesion as a polyp. Definitive diagnosis is pathological and

incidental, with IHC MUC-5A and CK20 characterization. Currently, cholecystectomy is not recommended for polypoid lesions smaller than 1 cm in the absence of symptoms. In cases of doubtful radiologic evaluation/follow-up, cholecystectomy can be performed for complete pathological study. In the absence of an invasive component or locoregional involvement, the five-year prognosis is good, with a 90% survival rate (PASCUAL et al., 2022).

## 2 CASE REPORT

A.F.S, male, in outpatient follow-up for irritable bowel syndrome, presenting clinical decompensation of the disease, with diarrhea (seven episodes per day, without blood and mucus), hyporexia, weight loss, performed complementary tests for the disease, diagnosing incidental gallbladder polyp. Personal history only follow-up of irritable bowel syndrome. No other comorbidities. He reports being a smoker (1 pack/year).

Patient presented with abdominal ultrasound showing a 9/7 mm polyp and nephrolithiasis.

Laboratory tests showed hemoglobin of 14.1; hematocrit of 42.6%; platelets of 169,000; leukocytes of 6,635; iron of 126; ferritin of 93.7; vitamin B12 of 765; vitamin D = 36.9; glycemia of 92; total cholesterol of 202; urea of 24; creatinine of 1; sodium of 143; GOT of 37; GPT of 53; TSH of 15.9 and T4 of 0.71.

Surgical treatment of the gallbladder polyp was chosen, and videolaparoscopic cholecystectomy was performed. Patient had one day of hospitalization, received diet on the same day and discharged the next day, with outpatient return in 15 days for removal of stitches and biopsy evaluation, which diagnosed intracholecystic papillary neoplasia.

## 3 DISCUSSION

A gallbladder polyp (BGP) is an elevation of the gallbladder wall that protrudes into the lumen. The most common type are the so-called pseudo or cholesterol polyps, accounting for 60% to 90% of gallbladder polyps. The presence of cholesterol polyps may be indicative of pathological gallbladder disease such as chronic cholecystitis (WILES et al., 2017). Both pseudopolyps and inflammatory polyps are at low risk of developing neoplasms. They rarely exceed 1 cm in size and are usually multiple. Adenomatous polyps, known as true polyps, are neoplastic, but are rare and often associated with gallstones. Their size can vary from 5mm to 20mm (JONES et al., 2022). In the present study, the patient had a polyp of 9/7 mm, finding that it fits within the data raised so far.



Studies on gallbladder polyps have shown that there is a higher prevalence among men, usually affected at the age of 40 to 58 years (RIDDELL et al., 2022). However, other literature has shown that the incidence is higher in even older patients, demonstrating that this is a disease of late involvement (JONES et al, 2022). In our case it was a male patient, but what differed from the literature is the age, because the patient is young.

The etiology of polyp formation is from the precipitation of cholesterol or bile salts, which form projections in the inner lumen of the gallbladder wall. The presence of cholesterol polyps may be indicative of pathological gallbladder disease, such as chronic cholecystitis (WILES et al., 2017). Among the laboratory tests presented by the patient, it was possible to perceive hypercholesterolemia, with total cholesterol of 202 mg/dL.

Most PVs are asymptomatic. However, some patients with cholesterol stones have reported gallbladder hypofunction, with characteristic symptoms of biliary stasis, abdominal pain, nausea and food intolerance. Patients who have larger adenomatous lesions may consequently experience greater symptoms. These polyps can reach such large sizes that they can be palpated in the abdomen. In addition, Murphy's sign and pain on deep palpation of the cystic point may be present (JONES et al., 2022).

The present patient was undergoing outpatient follow-up for irritable bowel syndrome, but arrived with a clinical decompensation presenting diarrhea, hyporexia, weight loss, performed complementary tests for the disease, diagnosing incidental gallbladder polyp. The symptoms presented demonstrate an atypical clinical picture, demonstrating the variation of the symptomatology according to the particularities of each patient.

Gallbladder polyps are usually found through imaging tests, such as a CT scan or abdominal ultrasound. Abdominal ultrasound is the ideal examination for the diagnosis of gallbladders due to its high sensitivity and specificity, with 93% and 95.8% respectively (MARTINHO et al., 2010). In the present case, the patient underwent an abdominal ultrasound, not necessarily the ideal exam, but it was able to identify the polyp.

PVs can be classified according to their histology into: benign, which can be hyperplastic or metaplastic; and malignant, the latter being the neoplastic form, such as adenomas and carcinomas (ANDREA et al., 2020). For those classified as malignant, adenocarcinoma accounts for about 85% of cases and are most often diagnosed incidentally on abdominal ultrasound. Studies indicate that a polyp  $\geq 10$  mm is a predictor of malignancy (MEJIA et al., 2021). Although the patient presented a gallbladder polyp with a parameter lower than that established as a predictor of malignancy, it could be within the 85% due to incidental discovery during ultrasound.



The decision to indicate cholecystectomy or ultrasound follow-up depends on the following factors: size of the polyp(s); presence or absence of symptoms; presence or absence of gallstones; presence or absence of risk factors for malignant gallbladder neoplasia. Cholecystectomy is indicated, regardless of symptoms, for patients with: polyp greater than or equal to 10 mm, due to the greater chance of malignancy; polyp of 6 to 9 mm associated with cholelithiasis or risk factors for gallbladder neoplasia; polyp with growth, of 2mm or more, over two or more ultrasounds; polyp and diagnosis of primary sclerosing cholangitis (TelessaúdeRS UFRGS, 2021).

According to the Brazilian Liver Institute (IBRAFIG), patient management depends on the characteristics of the vesicular polyps and the clinical picture presented. In this sense, lesions equal to or greater than 1cm in diameter should be referred for cholecystectomy, as they have a high risk of progression to gallbladder cancer. However, in symptomatic patients, aged over 50 years or with primary sclerosing cholangitis, cholecystectomy is indicated regardless of the size of the vesicular polyps. PVs smaller than 1cm and without risk factors, should be monitored by abdominal ultrasound every six months, if the evolution of size is noted, polyps larger than 1cm, surgery may be indicated. In our case, the treatment chosen was laparoscopic cholecystectomy with biopsy, due to the fact that the patient was symptomatic.

Adenocarcinoma can be classified histologically into papillary, tubular and mucinous (RUEDA et al., 2017). Papillary neoplasms of the biliary tract are classified into papillary neoplasm of the bile ducts (NPIDB), neoplasm of the ampullary region and intracolecystic papillary neoplasm (RESENDE et al., 2014). At the patient's outpatient return in 15 days for removal of the stitches and evaluation of the biopsy result, intracolescent papillary neoplasia was diagnosed.

Intracholecystic Papillary Neoplasia is a rare entity and little described in the literature, corresponding to 0.4-0.61% of all cholecystectomies. It is an intraluminal lesion with exophytic growth, premalignant and associated with progression to carcinoma in more than 50% of cases. Patients are often asymptomatic, although up to half present with abdominal pain and 20% have concomitant cholelithiasis. Abdominal ultrasound is the main radiological examination that describes the papillary lesion as a polyp. Definitive diagnosis is pathological and incidental, with IHC MUC-5A and CK20 characterization. In absence of invasive component or locoregional involvement, at five years the prognosis is good, with a 90% survival (PASCUAL et al., 2022).



#### 4 CONCLUSION

Based on the above discussion, we can conclude that gallbladder polyp is an elevation of the gallbladder wall that protrudes into the lumen. Cholesterol polyps are the most common, accounting for the majority of gallbladder polyp cases. Generally, these polyps have a low risk of developing neoplasms and are usually multiple and less than 1cm in size. On the other hand, adenomatous polyps are neoplastic, associated with gallstones and can vary in size.

Age and gender may influence the prevalence of gallbladder polyps, with a higher incidence in men and generally in older age groups. However, there are individual variations in these patterns.

The diagnosis of gallbladder polyps is usually made by imaging tests, such as abdominal ultrasound, which is highly sensitive and specific. Polyps can be classified as benign, such as hyperplastic and metaplastic, and malignant, such as adenomas and carcinomas. Polyps with a size of 10mm or more have a higher chance of malignancy.

The decision to perform cholecystectomy or ultrasound follow-up depends on several factors, including the size of the polyps, the presence of symptoms, the presence of gallstones and risk factors for malignant gallbladder neoplasia. Cholecystectomy is recommended for symptomatic polyps greater than or equal to 1cm in patients over 50 years of age or with primary sclerosing cholangitis.

In the case discussed, the patient had a 9/7mm polyp, which placed him within the standards identified in the literature. Despite being symptomatic and of younger age, the decision to perform cholecystectomy was made taking into account the clinical symptoms and the incidental diagnosis of intracholecystic papillary neoplasia.

Intracholecystic papillary neoplasia is a rare, premalignant entity associated with progression to carcinoma in more than 50% of cases. Definitive diagnosis is made by pathological examination, and prognosis is generally favorable when there is no invasive component or locoregional involvement.

In summary, the management of gallbladder polyps depends on the individual characteristics of each patient, including the size of the polyps, the presence of symptoms and risk factors. Cholecystectomy is indicated in specific cases to prevent future complications. Clinical follow-up and early diagnosis play an important role in identifying polyps with malignant potential.





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