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The sonographer dilemma: Ultrasound follow-up in patients with small gallbladder polyps

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What should sonographers recommend to patients diagnosed with small gallbladder polyps? Is follow-up always the solution? And for how many years should we encourage patients to participate in a follow-up ultrasound program?

Gallbladder polyps are visualized by ultrasound and will appear as a lesion protruding into the lumen of the gallbladder wall. Gallbladder polyps is an incidental finding during abdominal ultrasound scan, but a common phenomenon. Most often gallbladder polyps are an asymptomatic condition. Gallbladder polyps can be misinterpreted as inflammation, skinfold, cholecystolithiasis during an ultrasound investigation. The gallbladder polyp prevalence has been reported up to approximately 5%^{1,2} but other studies has reported higher prevalence³. In most cases the gallbladder polyp is a benign lesion, however there is a concern if the polyp during growth can transfer into a malignant lesion. Unfortunately, patients diagnosed with gallbladder cancer has a very poor prognosis due to its late diagnosis. Polyps are not treatable, and the only curative treatment is resection of the gallbladder. Still, most often gallbladder polyps do not need any treatment. Data from GLOBOCAN 2018 reports of 165 000 gallbladder cancer deaths yearly world-wide⁴, and the incidence varies significant between ethnic groups. It has been reported with incidence up to 27/100 000 in American indigenous populations⁵.

Findings of gallbladder polyps requires management, as the risk of malignancy increases in patients with polyp size of >10 mm, >50 years of age, co-existing gallstones and/or rapid

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polyp growth⁶. Therefore, it is very important that sonographers have knowledge and access to current guidelines.

A recent retrospective study found a prevalence of 8% (759 of 9683 patients) during 2010 to 2020 and found that polyp change in size during serial ultrasound examination. The study found that 10% of the polyps increased in size if the threshold of 2 mm was used⁷.

The current guidelines recommend surgical removal of the gallbladder if polyps >10 mm, and ultrasound follow-up if the polyp size is between 6-9 mm⁶. However, the guideline also recommends that polyps less than 6 mm in patients with no risk factors undergo 5 years follow-up (ultrasound at 1, 3 and 5 years)⁶. Risk factors are above the age of 50, ethnicity and focal wall thickening >4mm⁶.

But most often the polyp will be smaller than 6 mm in size. What do we do with the small polyps? Is follow-up at 1 year, 3 year and 5 years after the initial diagnose necessary? The current guidelines recommend this strategi. A gallbladder polyp management study highlights that the low prevalence and poor understanding of polyps natural history has led to inconsistent management policies because most guidelines are based on retrospective studies with small sample size⁸. Another systematic literature review including studies from 1996 to 2011 investigated growth rate and malignancy in small gallbladder polyps, and most of the studies found no correlation between growth and development of malignancy.

A review from 2018 highlights three key features in gallbladder polyp diagnosis.

1. it is important that the diagnosis of polyp is correct and able to differentiate polyps from gallstones and/or sludge and mucosa skinfolds.
2. Then it is important to discriminate true polyps with pseudo-polyps.
3. It is important to measure the polyps size correct, as this often determines if a patients will or will not undergo surgery⁹.

Not all gallbladder studies have an ultrasound approached. Irie et al. investigated polyps using MRI and MRI diffusion. The study showed that high b-values were seen in malignant lesion. However, the study had a low number of patients 10 benign and 13 malignant polyps¹⁰. This finding was confirmed in a larger study of Ogawa et al¹¹. However, ultrasound is still the preferred modality due to its availability and low cost.

In 2012 our research group published a study including a total of 203 patients (114 woman and 89 men) with gallbladder polyps (the patients were offered an ultrasound scan every 6 months during a two year period)¹². No patients developed malignancy during the study period. The mean polyp size was measured to 5 mm, and in 86% of the patients the polyp size was less than 6 mm.

In 2020 the Danish group published another study investigating long-term follow-up growth in patients with small polyps ≤ 6 mm. The study included 154 patients (100 women and 54

men) ¹³, and patients diagnosed with a polyp less than 6mm were invited to a 10-year follow-up ultrasonography in the Department of Radiology. The findings showed that a total of 15 polyps had an increase growth of 2 mm in size or more during a the 10-year period. The mean polyp size was 4 mm, and no patients were diagnosed with a gallbladder cancer. This study showed that small gallbladder polyps have low probability of growth. The study conclude that it may be considered if it really is necessary to follow-up in patients with polyps less than 6 mm. However, the European Societies in 2017 recommends that polyps less than 6 mm in patients with no risk factors undergo 5 years follow-up (ultrasound at 1, 3 and 5 years). There is an increasing need for prospective studies in the subject, as most are of retrospective character before a new approach can be considered.



Figure 1.

The image shows a gallbladder polyp 5.3 mm in size adherent to the gallbladder wall with no acoustic shadowing (no gallstone detected).

References

1. Afzal A., Kristiansen VB., Rosenberg J. Gall bladder polyps. *Ugeskr Læger* 2001;163:5003–6.
2. Jørgensen T., Jensen KH. Polyps in the gallbladder. A prevalence study. *Scand J Gastroenterol* 1990;25:281–6. <https://doi.org/10.1186/s12876-019-0959-3>
3. Heitz L., Kratzer W., Gräter T., Schmidberger J. Gallbladder polyps - A follow-up study after 11 years. *BMC Gastroenterol* 2019;19:42. Doi: 10.1186/s12876-019-0959-3.
4. Bray F., Ferlay J., Soerjomataram I., Siegel RL., Torre LA., Jemal A. Global Cancer statistics 2018:GLOBOCAN estimates of incidence and mortality world-wide for 36 cancers in 185 countries. *CA Cancer J Clin* 2018;68:394–424. <https://doi.org/10.3322/caac.21492>
5. Hundal R., Shaffer E. Gallbladder cancer: epidemiology and outcome. *Clin Epidemiol* 2014;7:99–109. doi: 10.2147/CLEP.S37357

6. Wiles R., Thoeni RF., Barbu ST., Vashist YK., Rafaelsen SR., Dewhurst C., et al. Management and follow-up of gallbladder polyps. *Eur Radiol* 2017;27:3856–66. doi: 10.1007/s00330-017-4742-y
7. Walsh AJ., Bingham DB., Kamaya A. Longitudinal ultrasound assessment of changes in size and number of incidentally-detected gallbladder polyps. *AJR Am J Roentgenol* 2021;10.2214/AJR.21.26614. Doi: 10.2214/AJR.21.26614.
8. Valibouze C., EL Amrani M., Truant S., Leroy C., Millet G., Pruvot FR., et al. Management of gallbladder polyps. *J Visc Surg* 2020;157:413–20. Doi: 10.1007/s10353-020-00659-8.
9. McCain SR., Diamond A., Jones C., Coleman HG. Current practices and future prospects for the management of gallbladder polyps: A topical review. *World J Gastroenterol* 2018;9327(26). doi: 10.3748/wjg.v24.i26.2844.
10. Irie H., Kamochi N., Noijri J., Egashira Y., Sasaguri K., Kudo S. High b-value diffusion-weighted MRI in differentiation between benign and malignant polypoid gallbladder lesions. *Acta Radiol* 2011;52(3):236–40.
11. Ogawa T., Horaguchi J., Fujita N., Noda Y., Kobayashi G., Ito K., et al. High b-value diffusion-weighted magnetic resonance imaging for gallbladder lesions: differentiation between benignity and malignancy. *J Gastroenterol* 2012;47(12):1352–60. <https://doi.org/10.1007/s00535-012-0604-1>
12. Pedersen MR., Dam C., Rafaelsen SR. Ultrasound follow-up for gallbladder polyps less than 6 mm may not be necessary. *Dan Med J* 2012;oct 59(10):A4503.
13. Rafaelsen SR., Otto PO., Pedersen MRV. Long-term ultrasound follow-up in patients with small gallbladder polyps. *Dan Med J* 2020;67(10).