



Is Pancreatic Incidentalomas Biopsy is Necessary during Bariatric Surgery- Three Case Reports

Mohammad Kermansaravi¹, Foolad Eghbali^{1*}, Sattar Darabi¹ and Abdolreza Pazouki^{1,2}

¹Department of Minimally Invasive Surgery, Iran University of Medical Sciences, Iran

²Department of Minimally Invasive Surgery, Center of Excellence of International Federation for Surgery of Obesity, Iran

Abstract

Background: Obesity, especially in central form and high body mass index (BMI) ≥ 25 kg/m², lead to higher incidence of some malignancies such as pancreatic malignant tumors in this population. In addition, there is a defect on screening test for pancreatic malignancies in morbid obese patients before bariatric surgery. The approach to incidental solid pancreatic mass (solid incidentaloma) during bariatric surgery is challenging and has never been described.

Case Summary: We report three morbid obese cases that despite to follow recommended routine pre-operative evaluation according to bariatric surgery guidelines, it was found prominent mass in pancreatic head area during bariatric surgery. Laparoscopic biopsy showed focal pancreatitis in the histopathologic in two cases and showed lipomatosis in one of the cases.

Conclusion: There are no strong evidences that any incidental mass during bariatric surgery must be biopsied but the patients must be observed via precise follow-ups.

Keywords: Morbid obesity; Bariatric surgery; Pancreatic incidentalomas; Pancreatitis; Laparoscopic biopsy; Case report

OPEN ACCESS

*Correspondence:

Foolad Eghbali, Minimally Invasive Surgery Research Center, Iran University of Medical Sciences, Iran, Hazrat-e-Rasool Hospital, ShahidMansouri Ave., Niyayesh St. Sattarkhan St., Setayesh Street, No. 98, Tehran, Iran, Tel: 009866555448, Fax: +98-21-66501113; E-mail: foolade@yahoo.com

Received Date: 01 Aug 2016

Accepted Date: 04 Sep 2017

Published Date: 20 Sep 2017

Citation:

Kermansaravi M, Eghbali F, Darabi S, Pazouki A. Is Pancreatic Incidentalomas Biopsy is Necessary during Bariatric Surgery- Three Case Reports. Clin Surg. 2017; 2: 1618.

Copyright © 2017 Foolad Eghbali. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

Nowadays, the incidence of obesity is increasing and so, bariatric surgeries are being more common and more popular. Before performing bariatric surgery, medical and psychologic evaluation must be done by a multidisciplinary team and this evaluation is nearly similar to other major abdominal surgeries; and malignancy screening is done only based on age and sex according to international health guidelines [1,2].

It was reported that obesity, especially central obesity and body mass index (BMI) ≥ 25 kg/m², is associated with higher incidence of some malignancies such as pancreatic cancer and some high volume studies concluded that any 5 units increasing in BMI, lead to 10 percent increasing pancreatic cancer risk and an increase of 20 to 60% in morbid obesity risk overall [3-6].

In addition, there is no test for pancreatic cancer screening and even the pancreatic enzymes in bariatric surgery especially in asymptomatic patients [1,7].

Due to the lack of screening tests for early detection, it usually presents in advance and unresectable forms. So, any incidental solid pancreatic mass (solid incidentaloma) needs histopathological examination to achieve definite diagnosis and differentiate between malignant lesion from pre-malignant or benign lesions, such as focal pancreatitis, due to difficulty of definite differentiation with imaging and biochemical tests. [3,8-10].

Due to the importance of histopathological diagnosis of pancreatic incidentalomas (PIs) and the increased risk of pancreatic cancer in morbid obese patients, it is reasonable to have a guideline to approach these lesions which has not been described before., Three hundred and seventy five patients underwent laparoscopic bariatric surgery in our obesity clinic, Rasool-e-Akram hospital, Iran University of Medical Sciences, Tehran, Iran, as a Center of Excellence of International Federation for Surgery of Obesity and Metabolic Disorders (IFSO), from August 2015 to March 2017.

Case Presentation

Case 1

An 18 year old female with BMI of 45 kg/m² was scheduled for bariatric surgery after

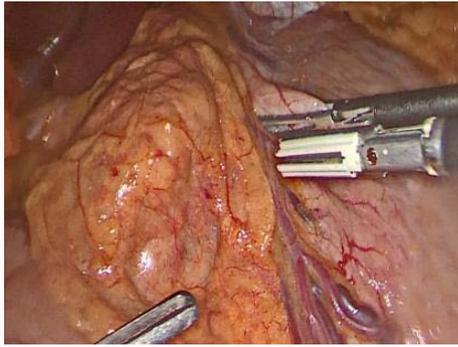


Figure 1: Prominent pancreatic head mass.



Figure 2: Excisional biopsy of regional enlarged lymph nodes.

psychological and medical evaluations by our multidisciplinary team according to American Society for Metabolic and Bariatric Surgery (ASMBS) guideline [2], Abdominal ultrasonography (US) to evaluate the liver and gallbladder stones (as a routine in our center) was normal in this patient. Due to her complain of heartburn, she also underwent upper gastrointestinal endoscopy (UGIE) and had only mild gastritis, with negative *Helicobacter pylori* (HP). All biochemical analysis such as complete blood count (CBC) and liver function test (LFT) were normal. She had no familial history of gastrointestinal malignancies and also no history of alcohol and cigarette usage. During laparoscopic surgery, we found a prominent lobulated mass with 3cm diameter in head of pancreas. We did laparoscopic incisional biopsy of mass and postponed the bariatric operation till getting the definite histopathological report and send her tumor markers carcinoembryonic antigen (CEA) and Cancer Antigen 19-9(CA 19-9). The definite pathologic report was focal chronic pancreatitis with fibrosis and CEA, CA19-9, amylase and lipase were in normal ranges. Six days after, the patient underwent laparoscopic sleeve gastrectomy.

Case 2

A 42 year old female with BMI of 52 kg/m², complete pre-operative medical evaluation after eradication of HP was scheduled for surgery. She had normal abdominal US and chronic gastritis in UGIE. She had no significant finding in familial history and drug history. During the surgery, we detected a lobulated prominence pancreatic head zone, with at least 5 cm diameter and regional enlarged lymph nodes (LNs) which are shown in (Figure1). We performed LNs excisional biopsy (Figure 2), mass incisional biopsy, and laparoscopic mini-gastric bypass, simultaneously. We also requested pancreatic enzymes test and tumor markers. All requested biochemical tests were normal and the pathologic reports were focal pancreatitis with inflammatory LNs, without any evidences of malignancy.

Case 3

The 29 years old rarely smoker and type-2 diabetic male with BMI of 56 kg/m² underwent bariatric surgery after pre-operative evaluations. He had a 5mm asymptomatic gall stone and other evaluations had no significant finding. We discovered a 3cm firm mass in head of pancreas during laparoscopy. We accomplished laparoscopic core needle biopsy (CNB) with a 16 gauge automatic reusable biopsy device and performed laparoscopic mini-gastric bypass at the same time. The pathologic report was focal lipomatosis without malignancy.

In all above cases, we performed regular follow-ups in addition to check the CA19-9 and CEA 1,3 and 6 months after surgery. All tumor markers were free of malignancy evidence and the patients had not

any specific complains.

Discussion

Obesity is an important risk factor for both acute pancreatitis and pancreatic cancer [4]. Recently, the worldwide incidence of pancreatitis is increasing in parallel with increased incidence of obesity [11,12]. High inflammatory reactions, obesity or hypertriglyceridemia related lipotoxicity and high concentrated bilirubin are possible mechanisms responsible for pancreatitis in obese patients [5,12-14]. Also, obesity has a significant effect on pancreatic malignancies, with some possible effects, such as inflammatory and humoral effects of fatty tissue, hyperinsulinemia and insulin resistance, increased exposure to some nutritional carcinogens and decreased physical activities [3,4].

Approach to PIs in morbid obese patients should be different from normal weight patients due to increased risk of malignancy in obese patients [3] and tissue sampling may be necessary in these patients.

Biopsy has a critical role in definite diagnosis and determining the best option for treatment in solid PIs [15]. There are some minimally invasive methods for tissue sampling including ;endoscopic ultrasound-guided fine needle aspiration biopsy (EUS-FNA), CT or US-guided core needle biopsy (CNB), and laparoscopic biopsy. Some studies demonstrated that EUS-FNA and CT or US-CNB had a similar accuracy [10,16] and in solid PIs had sensitivity of 75%-99%, specificity of 82%-100%, and accuracy of 94%-99% [10,15-19].

Küper, et al. [6] reported a diagnosis of pancreatic head cancer, 3 months after laparoscopic sleeve gastrectomy in a morbid obese patient that despite pylorus-preserving pancreatic head resection and adjuvant chemotherapy, the patient died due to local recurrence and liver metastases 9 months post operatively.

We performed laparoscopic incisional biopsy in two patients and laparoscopic-guided CNB in the other one which resulted in definite diagnosis and rule out of malignancy in the shortest possible time. The most common benign solid PIs are focal chronic pancreatitis, and subsequently lipomatosis, solid pseudo-papillary tumors and benign neuroendocrine tumors [9]. The bariatric surgery postponed to receive the histopathologic report in case 1. In this case, the bariatric surgery was more challenging due to some adhesions of posterior of stomach to pancreas after incisional biopsy. It seems that in laparoscopic confronting to PIs during bariatric surgery, there is no evidence of obvious malignant lesion, laparoscopic biopsy of lesion with simultaneous bariatric surgery is the best option, but there is no strong evidence to do biopsy. Although need for a proprietary algorithmic approach in these patients is very important.

Additionally, Regular and more precise follow-ups of these patients, and serious attention to any new symptoms, particularly abdominal symptoms are necessary.

In conclusion, it is reasonable to perform tissue biopsy for PIs during bariatric surgery and to continue the bariatric operation, and then to have more precise follow-ups post-operatively. It is necessary to do more studies to assess and provide guidelines for dealing with an incidental solid pancreatic mass in morbid obese patients during bariatric or other abdominal surgeries.

Inform Consent

Written informed consent was obtained from all patients to use their document information to write this manuscript.

References

1. Committee SG. SAGES guideline for clinical application of laparoscopic bariatric surgery. *Surg endosc.* 2008;22(10):2281-300.
2. Dana Telem ea. American Society for Metabolic and Bariatric Surgery: Care Pathway Development for Laparoscopic Sleeve Gastrectomy. 2016.
3. Bracci PM. Obesity and pancreatic cancer: overview of epidemiologic evidence and biologic mechanisms. *Mol carcinog.* 2012;51(1):53-63.
4. Grigor'eva I, Efimova O, Suvorova T, Tov N. Pancreatitis, pancreatic cancer and obesity: hypothesis and facts. *Eksp Klin Gastroenterol.* 2014;(9):4-10.
5. Zyromski NJ. Obesity-Related Effects on Pancreatic Disease. *Pancreapedia: The Exocrine Pancreas Knowledge Base.* 2015.
6. Küper MA, Königsrainer I, Schmidt D, Kramer KM, Glanderath FA, Schneider J, et al. Morbid obesity and subsequent pancreatic cancer: pylorus-preserving pancreatoduodenectomy after laparoscopic sleeve gastrectomy. *Obes Surg.* 2009;19(3):385-8.
7. Mechanick JI, Youdim A, Jones DB, Garvey WT, Hurley DL, McMahon MM, et al. Clinical practice guidelines for the perioperative nutritional, metabolic and nonsurgical support of the bariatric surgery patient-2013 update: cosponsored by American Association of Clinical Endocrinologists, the Obesity Society, and American Society for Metabolic & Bariatric Surgery. *Endocr Pract.* 2013;19(2):337-72.
8. Tyng CJ, Almeida MFA, Barbosa PN, Bitencourt AG, Berg JAA, Maciel MS, et al. Computed tomography-guided percutaneous core needle biopsy in pancreatic tumor diagnosis. *World J Gastroenterol.* 2015;21(12):3579-86.
9. Karatzas T, Dimitroulis D, Charalampoudis P, Misiakos E, Vasileiadis I, Kouraklis G. Management of cystic and solid pancreatic incidentalomas: a review analysis. *J BUON.* 2013;18(1):17-24.
10. Yang RY, Ng D, Jaskolka JD, Rogalla P, Sreeharsha B. Evaluation of percutaneous ultrasound-guided biopsies of solid mass lesions of the pancreas: a center's 10-year experience. *Clin Imaging.* 2015;39(1):62-5.
11. Sawalhi S, Al-Maramhy H, Abdelrahman AI, Allah SEG, Al-Jubori S. Does the presence of obesity and/or metabolic syndrome affect the course of acute pancreatitis?: A prospective study. *Pancreas.* 2014;43(4):565-70.
12. Bonfrate L, Wang DQ, Garruti G, Portincasa P. Obesity and the risk and prognosis of gallstone disease and pancreatitis. *Best Pract Res Clin Gastroenterol.* 2014;28(4):623-35.
13. Nawaz H, Koutroumpakis E, Easler J, Slivka A, Whitcomb DC, Singh VP, et al. Elevated serum triglycerides are independently associated with persistent organ failure in acute pancreatitis. *Am J Gastroenterol.* 2015;110(10):1497-503.
14. Patel K, Trivedi RN, Durgampudi C, Noel P, Cline RA, DeLany JP, et al. Lipolysis of visceral adipocyte triglyceride by pancreatic lipases converts mild acute pancreatitis to severe pancreatitis independent of necrosis and inflammation. *Am J Pathol.* 2015;185(3):808-19.
15. Tarantino I, Di Mitri R, Fabbri C, Pagano N, Barresi L, Granata A, et al. Is diagnostic accuracy of fine needle aspiration on solid pancreatic lesions aspiration-related? A multicentre randomised trial. *Dig Liver Dis.* 2014;46(6):523-6.
16. Sur YK, Kim YC, Kim JK, Lee JH, Yoo BM, Kim YB. Comparison of Ultrasound-Guided Core Needle Biopsy and Endoscopic Ultrasound-Guided Fine-Needle Aspiration for Solid Pancreatic Lesions. *J Ultrasound Med.* 2015;34(12):2163-9.
17. Detlefsen S, Mortensen MB, Pless TK, Cribbe A-S, de Muckadell OBS. Laparoscopic and percutaneous core needle biopsy plays a central role for the diagnosis of Autoimmune Pancreatitis in a single-center study from denmark. *Pancreas.* 2015;44(6):845-58.
18. Kahrman G, Ozcan N, Dogan S, Ozmen S, Deniz K. Percutaneous ultrasound-guided core needle biopsy of solid pancreatic masses: Results in 250 patients. *J Clin Ultrasound.* 2016;44(8):470-3.
19. Xu K, Zhou L, Liang B, Niu L, Zheng X, Xu J, et al. Safety and accuracy of percutaneous core needle biopsy in examining pancreatic neoplasms. *Pancreas.* 2012;41(4):649-51.