

DETERMINATION OF RELATIONSHIP BETWEEN SIZE AND LOCATION OF GASTROINTESTINAL LIPOMA ON PLAIN CT SCAN WITH SYMPTOMATOLOGY AND COMPLICATIONS: A RETROSPECTIVE STUDY AT TERTIARY CARE HOSPITAL

Ateeque Ahemed Khan

Dow University of Health Science Karachi

ABSTRACT

Objective: To determine the frequency, size and location of different types of gastrointestinal (GIT) lipomas on plain CT scan and diagnostic accuracy of CT scan in diagnosis of lipoma.

Study Design: Descriptive study.

Place and Duration and Study: Radiology department, Civil Hospital and Dow University of Health Sciences, Karachi, from Jan 2010 to Jun 2012.

Methodology: This descriptive study was conducted in Radiology department of a tertiary care hospital in Karachi. All cases of CT scan which showed fat containing lesions in GIT were included in study. In all cases, CT scan abdomen was performed due to any other intra abdominal pathology. Diagnosis of lipoma was based on homogenous hypodensity of lesion with CT number (Hounsfield units) corresponding to fatty lesion.

Results: A total of 45 cases were selected for this study. Among these, 40 patients under-went follow up CT scan abdomen performed after 1-3 years and showed no change in size, shape and remained asymptomatic as far as lipomas were concerned. In 13 (28.9%) cases of small intestinal lipoma, four cases showed multiple lipomas. Nine cases had lipomas in ileum and 6 cases showed lipomas in jejunal loops. In 19 (42.2%) cases of large bowel lipomas, seven cases showed multiple lipomas. In 8 (17.8%) cases, lipoma was identified in stomach. In five (11.1%) cases, esophageal lipoma was diagnosed on CT scan. In three cases lipoma identified intramurally while submucosal in two cases. All cases showed smooth homogeneously hypodense well define lesions with fat density range of -30 HU to -140 HU. All lesions were ovoid to spherical in shape. Size of lesions ranged 1-3.5 cm. No lipoma irrespective of its location, size and shape, was associated with ulcer, bleeding, obstruction, intussusceptions. All patients were asymptomatic and devoid of complications.

Conclusion: Diagnosis of GIT lipoma can be reliably made on plain CT scan without going for endoscopic or surgical biopsy for histopathology. The size and location of lipoma were neither associated with symptoms of patients nor complications. Lipomas also remained stable in respect to size, shape, appearance and density on follow up study.

Keywords: Gastrointestinal lipoma, CT scan abdomen.

INTRODUCTION

Intestinal lipomas are very uncommon tumors which can occur along any part of GIT but commonly seen in large bowel¹. They are usually solitary but can be multiple². GIT lipomas are well define hypoattenuating masses with uniform fat density on plan CT scan abdomen and commonly presented as polypoidal or pedunculated submucosal non enhancing mass on CT scan although they also presented as

sessile masses but less commonly³. They make up 0.03-4.40% of all intestinal neoplasms and majority of symptomatic lesions occur in adults in the sixth decade of life^{4,5}. Symptoms associated with GIT lipomas depends upon location and size of lesion i.e. in case of esophageal lipoma, dysphagia while in case of small and large intestine, intussusceptions as well as hematemesis, hematochezia or melena in case of ulceration in lipoma located in different parts of GIT^{6,7}. Diagnosis of GIT lipoma is based on CT Hounsfield units ranges from -40 to -130 HU. Different international articles have shown that GIT lipoma uncommonly can come in differential diagnosis of malignant lesion such as colonic

Correspondence: Dr Ateeque Ahemed Khan, 165-Block 2, Gulshan-e-Iqbal, Karachi
Email: atrafia@hotmail.com

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adenomatous polyp or carcinoma depending upon heterogeneity of lipomas and needle biopsy with histopathology for confirmation. This study was designed to determine frequency, size and location of different types of GIT lipomas and symptoms and /or complications. To assess diagnostic accuracy of CT scan in diagnosis of GIT Lipoma because many cases of GIT lipoma documented in international literature, faced diagnostic dilemma and needed biopsy and histopathology for diagnosis thus increases the risk of complications.

MATERIAL AND METHODS

It was a simple descriptive study done in Radiology department, Civil Hospital and Dow University of Health Sciences, Karachi from Jan 2010 to Jun 2012.

Forty five patients with well-defined homogenous fatty GIT masses were selected by non-probability purposive method. Patients with non fatty GIT masses were excluded.

Data collection procedure:

In all cases CT scan abdomen was performed due to any intra -abdominal pathology. Diagnosis of lipoma was based on homogenous hypodensity of lesion with CT number (Hounsfield units) corresponding to fatty lesion. All examinations were performed on MDCT scanner (Toshiba Aquilion 16). Pre and post contrast images were obtained. The post contrast scan was performed in Porto venous phase, 60-70 seconds after intravenous contrast administration of 100-120 mL of ionic contrast media (350 mg/mL) with flow rate of 3ml/second. Reconstruction thickness was 5 mm and reconstruction interval, 5 mm; and helical scanning was performed during a single breath-hold period.

Data collection and analysis: Data collected were recorded on a proforma specially design for this study having variables of socio-demographic, clinical and radiological findings. The results were analyzed through SPSS version 16. Frequency and percentages were calculated for all variables.

RESULTS

Total number of patients underwent CT scan abdomen since January 2010 to June 2012 were 2160, out of which 45 cases (2%) were diagnosed as having GIT lipoma incidentally. Out of these 45 patients selected for this study, 29 were males and 16 were females having mean age of 54 years (range 24-78 years). Among these, 40 patients under went follow up CT scan abdomen performed after 1-3 years for their primary disease and showed no change in size, shape and remained asymptomatic as far as lipomas were concerned. Out of 2160 abdominal CT scan, incidence of small intestinal lipomas was 0.6%, large intestinal lipomas 0.87%, gastric lipomas 0.37% and esophageal lipomas 0.23%. Among GIT Lipomas, percentage of small intestinal lipomas was 28.9% (13 cases), large intestinal lipomas 42.2%(19 cases), gastric lipomas 17.8% (8 cases) and esophageal lipomas 11.1% (5 cases). All cases of GIT lipomas showed smooth homogeneously hypodense well define lesions with fat density range of -30 HU to -140 HU. All lesions were ovoid to spherical in shape. No lipoma irrespective of its location, size and shape, was associated with ulcer, bleeding, obstruction, intussusceptions. All patients were asymptomatic and devoid of complications associated with lipoma. No appreciable change in size and number of GIT lipoma was observed in follow up study. All GIT lipomas were sessile and no pedunculated lipoma or intraluminal lipoma identified. No appreciable enhancement was seen on post contrast study in GIT lipomas in this study. In 13 cases of small intestinal lipoma, four cases show multiple lipomas. Nine cases showed lipomas in ileum and 6 cases showed lipomas in jejunal loops. In 13 cases of small bowel lipomas, 6 were subserosal in location while 3 were located intramurally and 4 lipomas were submucosal in location. Size of subserosal lipomas ranged 1-2 cm. Intramural and submucosal lipomas showed sizes between 1-1.5 cm. CT numbers ranged -30 to -65. In 19 cases of large bowel lipomas, seven cases showed multiple lipomas. Eight cases were subserosal while 5 cases showed intramural

location and 5 cases at submucosal location were identified. Nine cases located in ascending colon, 6 in transverse colon and two cases in descending colon. Size of large bowel lipomas ranged 2-3.5 cm. Subserosal and intramural lipomas size ranged 2-2.4 cm while subserosal lipomas size ranged 2.3-3 cm. CT numbers ranged -52 to -90. In 8 cases, lipoma was identified in stomach. In 5 cases gastric lipoma were located intramurally while subserosal in 2 cases and in one case submucosal in location. Size of gastric lipomas ranged 1.9-2.7 cm in subserosal location and intramurally while 3-3.5 cm in subserosal lipomas. CT numbers of lipomas ranged -84 to -140. In five cases esophageal lipoma diagnosed on CT scan. In three cases lipoma was identified intramurally while submucosal in two cases. Size of esophageal lipomas ranged from 1.5 to 2 cm. CT numbers of lipomas ranged from -49 to -110. Not a single case shows any symptoms and/ or complications due to GIT lipoma. All lipomas were diagnosed incidentally.

DISCUSSION

In many international studies it has been documented that GIT lipomas can impose diagnostic dilemma and polyps or carcinoma comes in differential diagnosis as these studies did prove it. These studies also mentioned that final diagnosis need histopathology^{4,8-11}. In our study diagnosis of GIT lipomas was clear absolutely. Fat containing well-defined lesion with uniform homogenous appearance was seen on plain CT scan while biopsy, endoscopic ultrasound, and endoscopy was not required as lesion remained stable on follow up study without change in size, shape and characteristics. In other International studies, it has been mentioned that esophageal lipoma has propensity in cervical segment of esophagus which is thought to be due to local effects of the propulsive forces of swallowing on the narrow cervical segment^{6,-14}. However our study didn't follow this theory as all esophageal lipomas were located in lower thoracic esophagus. Literature review showed association of esophageal lipomas with ulceration, luminal narrowing, obstruction

along with symptoms of dysphagia and hematemesis^{15,16}. In our study no such complications were seen with esophageal lipomas. This is because most lipomas in literature were submucosal or pedunculated in location^{17,18,19} while in our study, most lipomas were subserosal or intramural in location and only few were submucosal but still not pedunculated. It is also documented in few studies^{20,21,22,23,24} that small intestinal lipomas are rare, symptomatic and mentioned as case report and final diagnosis demand histopathology. While in our study, small intestinal lipomas were thirteen, all asymptomatic and diagnosis was based on plain CT scan (fat density) while lipomas remained asymptomatic without appreciable change in size, shape, numbers, and locations on follow up study. In two other international studies^{25,26}, it is also mentioned that large size colonic lipomas (3-4 cm) are associated with obstruction, ulceration and bleeding, perforation, intussusceptions, and, very rarely, massive hemorrhage, while in our study patients remained asymptomatic and no such complications were encountered despite of size of lipoma was up to 3.5 cm in colon.

CONCLUSION

Our study concludes that GIT lipomas fairly remain asymptomatic even up to 3.5 cm size without any complications. Our study also analyzed that benign fatty tumors can be reliably diagnosed on plain CT scan based on CT numbers of fat density without any need of endoscopy or surgery for histopathology. In addition, GIT lipomas can be left safely without surgical intervention as these remain static and stable without appreciable change in size, shape, numbers and architecture.

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