TAJ December 2008; Volume 21 Number 2

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Clinico-Pathological Correlation of Abdominal Lymphadenopathy

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Abstract

Abdominal lymphadenopathies are not uncommon in our population that we encounter during laparotomy done for various reasons. Many times patients present with chronic abdominal pain, even features of intestinal obstruction where mesenteric tuberculosis remains at the background. This study was done with an aim to see the clinico- pathological relation of incidental findings of abdominal lymphadenopathy found during laparotomy which was done for other causes.

TAJ 2008; 21(2): 126-131

Introduction

Abdominal lymphadenopathies are not uncommon in our population that we encounter during laparotomy done for various reasons. Abdominal lymphadenopathy is secondary to intra-abdominal or extra-abdominal inflammatory and neoplastic conditions. But surprisingly many a time presenting features obscure the diagnosis. Random sampling during laparotomy reveals lymphoma[1] and tuberculosis[2] in good number of cases. In Bangladesh having a high density of population with low health education, poor hygiene and poor health status, lot of people suffers from tuberculosis. Many times patients present with chronic abdominal pain, even features of intestinal obstruction are presented where mesenteric tuberculous lymphadenitis remains at the background. So this study was done with an aim to see the clinico-pathological correlation of incidental findings of abdominal lymph adenopathy found during laparotomy which was done for any other causes.

Objectives

General objectives

- To find out the distribution of the diseases and clinico-pathological correlation of abdominal lymphadenopathy.

Specific objectives

- To find out the frequency of per-operative incidental findings of lymphadenopathy;
- To know the underlying pathology of abdominal lymphadenopathy.

Methodology

This is observational study was carried out in the Department of Surgery, Faridpur Medical College, during the period from June 2005 to May 2006. Total 70 consecutive cases were included in this study having per-operative findings of lymphadenopathy, where laparotomy was done for various regions. Prior to surgery thorough history was taken and meticulous physical examination was performed. Necessary laboratory and imaging studies were done to establish the diagnosis.

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Finally, the patients were selected for laparotomy. All the patients had their laparotomy under general anesthesia. After laparotomy, abdomen was meticulously examined, suspected lesions were identified. Draining lymph nodes were examined in all the cases. Macroscopic examination of the lymph nodes included size, consistency, color, adhesion with other structures and appearances of cut surfaces. The groups of lymph nodes involved were noted in the operation note. Biopsy of the lymph nodes was taken from the suspected groups. In most of the resected specimen were sent for histopathology with preservative.

Results

Total 70 patients under gone laparotomy for various indications (Table-IV) within the study period. But lymph node sampling during operation revealed 34%, 24% and 4% had histopathological findings of tuberculosis, secondary metastasis and lymphoma respectively. In remaining cases-26% had nonspecific lymph adenitis and in 12% cases no significant pathological changes were found.

Table-I: Etiology of lymphadenopathy according to histopathological findings. (N=70)

Histopathological findings	Number of patients	Percentage
Tuberculosis	24	34.0
Nonspecific	18	26.0
Secondary to carcinoma	17	24.0
Lymphoma	3	4.0
No significant pathological change	8	12.0

Table-II: Age and sex distribution abdominal lymphadenopathy. (N=70)

Diagnosis	Age in years							
	1-10	11-20	21-30	31-40	41-50	50+	Male	Female
Tuberculosis	0	6	11	7	0	0	10	14
Nonspecific lymphadenitis	4	3	5	4	2	0	12	6
Secondary to carcinoma	0	0	2	4	3	8	12	5
Lymphoma	2	0	0	0	0	1	2	1
No pathological change	1	0	2	3	2	0	3	5

Table-III: Clinical Presentation abdominal lymphadenopathy. (N=70)

Clinical features	Number of patients	Percentage
Pain in the abdomen	53	76.0
Intermittent diarrhoea	10	14.0
Absolute constipation	4	6.0
Alteration of bowel habit	11	16.0
Fever	14	20.0
Vomiting	15	22.0
Weight loss	22	32.0
Acute abdomen	12	18.0
Mass in the abdomen	11	16.0
Progressive jaundice	14	2.0

Table-IV: Provisional diagnosis of the cases undergoing laparotomy. (N=70)

Diagnosis	Number of patients	Percentage
Ileo-caecal tuberculosis	7	10.0
Appendicitis	13	18.0
Intestinal obstruction	14	20.0
Mesenteric cyst	6	8.0
Chronic Cholecystitis	8	12.0
Abdominal lymphoma	3	4.0
Gastric outlet obstruction	10	13.0
Obstructive jaundice	1	2.0
Tubo-ovarian mass	1	2.0
Carcinoma caecum	2	3.0
Retroperitoneal growth	1	2.0
Intestinal perforation	3	4.0
Carcinoma rectum	1	2.0

Table-V: Sites of involvement tuberculosis lymphadenitis. (n=24)

Sites of involvement	Lymph nodal group involvement	Number of Patient No	%
GIT :			
Ileo-caecal	Ileocolic	10	(41.17)
Ileal	Mesenteric	5	(17.64)
Appendix	Ileocolic	2	(5.88)
Stomach		0	0
Large gut		0	0
RES :			
Mesenteric	Mesenteric	5	(17.64)
Para Aortic	Para Aortic	2	(5.88)
Others :			
Biliary tree	Cystic	1	(5.88)
Fallopian tube	Common	1	(5.88)

Table-VI: Clinical Presentation in non specific lymphadenitis. (n=18)

Clinical features	Number of patients	Percentage
Pain in the abdomen	13	100.00
Intermittent diarrhoea	2	15.30
Intestinal obstruction	2	15.30
Feature of acute appendicitis	6	46.15
Fever	4	30.76
Cervical lymphadenopathy	3	23.07
Vomiting	8	61.50
Alternation of bowel habit	1	7.60
Weight loss	1	7.60

Table-VII: Clinical presentation with duration, age, sex, provisional diagnosis and histopathological diagnosis of 3 cases of lymphadenopathy due to lymphoma. (n=70)

Case No	Clinical Presentation	Duration	Age in yrs.	Sex	Provisional diagnosis	Group of lymph mode	Histo pathology
1	Pain in abdomen Lump in abdomen Irregular fever	2 Months	55	M	Intestinal Tuberculosis	Mesenteric	Non-Hodgkin's disease
2	Lump in abdomen Severe weakness Anorexia Weight loss	6 Months	8	F	Retroperitoneal tumor	Pre-aortic	Hodgkin's Lymphoma
3	Pain in abdomen Lump in abdomen Irregular fever Intermittent diarrhea	4 Months	10	M	Sub acute Intestinal Obstruction	Mesenteric	Non-Hodgkin's Lymphoma

Discussion

Aims of this study were to find out the distribution of diseases and clinico pathological correlation of abdominal lymphadenopathy. Since abdominal lymphadenopathy could not be clinically diagnosed, so laparotomy and lymph node biopsy were considered as final proof of diagnosis. Though ultrasonography, CT scan and lymphangiography can give the idea of lymphadenopathy, but in this series, these were not considered routinely. A considerable number of studies were performed for abdominal lymphadenopathy by using ultrasound-guided fine needle aspiration cytology[3, 4, 5].

CT scan is widely used for abdominal lymphadenopathy for many malignant diseases. Lymphadenopathy has been defined when the lymph node size is greater than 6,10 and 15 mm, in short axis for retro-caval, abdominal and pelvic nodes,respectively[19].Abdominal lymphadenopathy has been detected by CT scan in sclerosing cholangitis, AIDS and hair-cell leukemia[6, 7].

In the context of our country, we do not have access to ultrasound, FNCA of abdominal lymph nodes or enough facility of CT scans everywhere. So, for the initiation of this type of study, we have clinically evaluated the patients with available investigation and taken lymph node biopsy of those patients undergoing laparotomy.

In this study, we have taken 70 patients for lymph node and diagnosis was confirmed by histopathology in all cases.

Tuberculous lymphadenitis ranks the highest position in this series (34%). A study in our country showed that cervical lymphadenopathy in

tuberculosis is 40%. Age distribution in our series ranges 11-40 years, mean age 26 years. Most of the cases (47%) were at the age of 21-30 years. Several studies in our country on abdominal tuberculosis showed nearly similar results. A Rabbi's (1990) series, mean age 29 years and maximum incidence was at 3rd decade (39.39%). While in Rouf's series (1982) at 3rd decade (62.96%) and in Rabiul's series (1984) 52.63% were affected with tuberculosis.

Females predominantly attacked in this series with the radio of 1.4:1. In Rabbi's series female male ratio was 1.2:1, in Rouf's series male female ratio was 1.7:1. Overall social negligence may be a factor for female predominance of the disease[9].

A study of abdominal tuberculosis in Saudi Arabia was carried out on 65 patients during a period of 7 years. In that series, abdominal tuberculous lymphadenitis was found in 5 cases (7.6%) and others were tuberculous peritonitis, tuberculosis of pancreas and duodenum. Overall percentage of abdominal tuberculosis was 21.88%. In Saudi Arabia male were affected more and median age was 30 years.

It is obvious from this study that tuberculosis is a problem in our country. Regarding the abdominal tuberculosis, the diagnostic problem persists for those patients where pulmonary tuberculosis is not obvious. In this study, abdominal tuberculous patients were poor, had low socioeconomic status. Most of the patients are habituated in drinking cow's milk. The proper pasteurization of milk is not possible due to lack to knowledge or government legislation. Another factor might be considered here that the cows are infected but not treated due to lack of proper veterinary supervision. So far, the immunological status of those patients concerned, it is inadequate. Massive program of immunization (EPI) started in our country for last 15 years. But the peak incidence of tuberculosis ranges from age 20-30 years. In general, these patients have lowed body resistances due to repeated upper respiratory infections and gastroenteritis. Overall, social prejudices and negligence's also an important factory. Female shows predominance because they are still neglected in our society.

The next common cause of abdominal lymphadenopathy was nonspecific lymphadenitis. Almost all cases, the mesenteric lymphadenopathy was found. Histopathologically most of them were only mild follicular hyperplasia. It is as common as tuberculous veriety[15]. Most of them were provisionally diagnosed as acute appendicitis. In our study acute nonspecific lymphadenitis is common in younger age, mean age 11 years, range 6-26 years. In our series, we did not correlate the nonspecific lymphadenitis with bacteriological or serological examination. But recently Yersinia pseudo tuberculosis and Y. enterocolitica infections have been diagnosed form culture of mesenteric lymph node and serologic titre[11].

In nonspecific lymphadenitis, lymph nodes were found mostly from mesenteric pre-aortic group. Lymph nodes were moderately firm in consistency, slightly yellowish in color. Primary disease pathology could not be identified on laparotomy. Most of the patients had pain in the abdomen, vomiting, intermittent diarrhea and acute intestinal obstruction. Some of them had history of drugs, e.g. anticonvulsant or history of exposure. Histopathological diagnosis shows 50% with sinus histiocytosis and remaining 50% follicular hyperplasia.

The third most common cause of abdominal lymphadenopathy is metastatic carcinoma of intra abdominal organ. In our country, most of the patients present with malignancy in a late stage. Reasons are the negligence of the patient, limited scope of early diagnostic in almost all the cases. Ultrasonography was used in 10 cases of which in 2 cases lymphadenopathy detected in the pre-aortic and mesenteric group. But because of uncertainty in USG report, CT scan of the abdomen was done in some of the cases. Distant focus of metastasis, e.g. cervical lymph node could not be clinically seen in all the cases.

In a study of 37 cases, preoperative diagnosis by ultrasound guided FNAC, 15 cases were

diagnosed as malignant. In this 15 (40.5%) cases, 7 lymphoma, 5 secondary carcinoma, 2 seminoma and 1 carcinoma tumour were diagnosed with a diagnostic specificity of 100% and sensitivity 85%[3].

In other studies, pelvic and para-aortic lymph node enlargement was detected by ultrasonography and CT scanning[12]. In addition to these, ultrasonography guided FNAC were done. Malignancy could be detected in those pelvic and para-aortic nodes. Minimum diameter of those nodes required for USFNC was 7-8 mm[4].

In this study, lymphomas have been considered separately as a cause of abdominal lymphadenopathy. Clinical diagnosis of abdominal lymphoma is relatively difficult task. Ultrasound guided FNAC nowadays were being used in a study, and showed 7 cases out of 37 patients as abdominal lymphoma[5]. But in our study, we have diagnosed only 3 cases of lymphoma (4%) through laparotomy. In this series, two patients were in pediatrics age, one female 8 years one male 10 years and another was 55 years old male. The younger girl presented with lump in the abdomen. Weight loss was significant and no lymphadenopathy could be in other sites of the body. She was diagnosed after laparotomy as Hodgkin's lymphoma of mixed cellularity. The other male child of 10 years age presented with pain and intra abdominal lump and H/O obstruction. Mesenteric lymph node group involved and was diagnosed as non Hodgkin's lymphoma. The involved lymph nodes were mostly pre-aortic group. We failed to stage the disease. The other one was diagnosed as non-Hodgkin's lymphoma. He was provisionally diagnosed as mesenteric tuberculous lymphadenitis. In this case on other primary site was identified after laparotomy. Lymphadenopathy either primary or secondary to other site, nodal study is mandatory especially for staging of the disease[15]. Important prognostic factor include are diagnosed after laparotomy, and according to some author it is true[2].

In the 8 cases, we have found enlarged lymph node during our routine surgery and taken biopsy. Two of them were taken from mesenteric group, 2 from gastroepiploic group, 1 from ileocolic group and 1 from sigmoidal group. All these lymph nodes biopsy were taken with the suspicion of any change. In these 6 cases, laparotomy was done for ileocolic intussusceptions (2), vagotomy and drainage operation (2), cholecystectomy (1) and sigmoid volvulus (1), Histopathological report revealed no significant change in any of the 6 nodes.

Al the end of discussion, our observation is that abdominal lymphadenopathy is not uncommon. In this series, we could categorize into two groups inflammatory and neoplastic. In the inflammatory group, we considered 42 cases (60%) and 20 cases (28%) as malignant case. Enlargement of lymph node in other cases, through our conventional histopathology says normal but significant case were made about lymph node enlargement in AIS patients[7.13].

Conclusion

In this study we have shown the disease distribution and clinico-pathological correlation of abdominal lymphadenopathy. In most of these cases, diagnosis was late and thought to be due to irregular treatment and lack of diagnostic facilities. Laparoscopic diagnosis may not be necessary in most of the case if we could extend our skill in preoperative diagnosis. However, laparoscopy is an effective way of reaching a conclusive diagnosis for unexplained abdominal lymphadenopathy.

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