

MDCT EVALUATION OF RIGHT ILIAC FOSSA PATHOLOGIES WITH SPECIAL EMPHASIS ON LYMPH NODAL CHARACTERISTICS

INVESTIGATOR: DR. JEEL LATHIYA (2nd year Resident doctor), AMC MET MEDICAL COLLEGE AND LG HOSPITAL, MANINAGAR, AHMEDABAD. jeel.lathiya@gmail.com

LEAD MENTOR: DR. DIPTI A. SHAH (Professor and Head of Department)
DEPARTMENT OF RADIODIAGNOSIS AMC MET MEDICAL COLLEGE AND LG HOSPITAL,
MANINAGAR, AHMEDABAD aps7psp@gmail.com

Abstract:

Introduction:

Right iliac fossa pathologies are one of the common reasons for right iliac fossa pain & patient presentation to the Emergency department. It may be related to either benign or malignant diseases. Radiological imaging plays a pivotal role in the differential diagnosis among these diseases. Lymphatic involvement of diseases helps us to learn about the nature of the disease and predict the way of progression, hence awareness with the normal lymph node radiological appearance and its suspicious criteria by radiologists is a crucial information for treatment preparation and execution.

AIMS AND OBJECTIVES:

1. To describe key imaging findings of various right iliac fossa pathologies.
2. To assess the role of characteristics of lymph nodes in various right iliac fossa pathologies.

METHODOLOGY:

A total of 50 cases clinically suspected & diagnosed of having right iliac fossa pathology by CECT imaging of abdomen, at the department of Radiodiagnosis, AMC MET Medical college, Maninagar, Ahmedabad were included in this study.

CECT was carried out on PHILIPS MX 16 slice CT machine after giving oral, rectal & iv contrast and axial, sagittal and coronal images were obtained.

RESULTS:

In our study, most common pathology found was acute appendicitis (16/50), followed by ileocaecal tuberculosis (12/50) and non-tuberculous infectious enterocolitis (11/50). The other pathologies encountered were epiploic appendagitis (3/50), caecal malignancy (2/50), diverticulitis (2/50), Crohn's disease (2/50) and lymphoma (1/50).

Discussion & CONCLUSION:

CE CT images of abdomen are very helpful in diagnosis of various right iliac fossa pathologies. Demonstration of lymph nodal patterns of enhancement and their characteristics can further help in narrowing the diagnosis of right iliac fossa pathologies.

IMRaD

Keyword: MDCT EVALUATION, RIGHT ILIAC FOSSA PATHOLOGIES, SPECIAL EMPHASIS, LYMPH NODAL

INTRODUCTION:

Right iliac fossa pathologies are one of the common reasons for right iliac fossa pain & patient presentation to the Emergency department. It may be related to either benign or malignant diseases. Radiological imaging plays a pivotal role in the differential diagnosis among these diseases.

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METHODOLOGY:

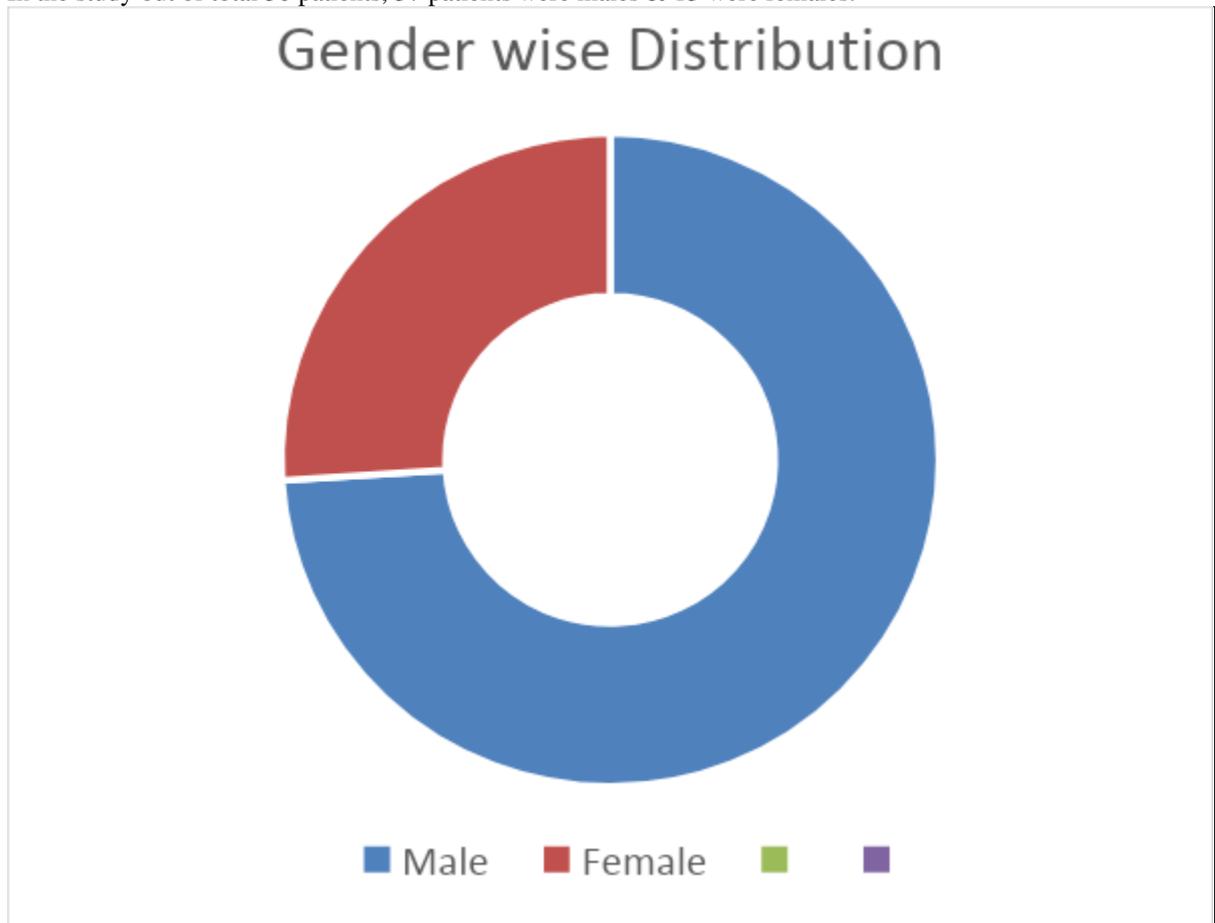
- Inclusion Criteria:
Patients found to be having right iliac fossa abnormalities on CECT imaging
All patients who give consent for study.
- 1. Exclusion Criteria
Pregnant female
Patients having raised S. creatinine level (> 1.5 mg/dl).
Patients not willing to take part in study.
- Study type: Observational study in 50 cases
- Study Time: May 2019 to May 2020
- Need of consent: Informed written consent was taken.

A total of 50 cases clinically suspected & diagnosed of having right iliac fossa pathology by CECT imaging of abdomen, at the department of Radiodiagnosis, AMC MET Medical college, Maninagar, Ahmedabad were included in this study.

CECT was carried out on PHILIPS MX 16 slice CT machine after giving oral, rectal & iv contrast and axial, sagittal and coronal images were obtained.

RESULTS:

In the study out of total 50 patients, 37 patients were males & 13 were females.



The mean age group affected were 35+/-2.5 years.

Age group(years)	No. of persons affected
5-15	1
15-25	21
25-35	8
35-45	12
45-55	4
55-65	4

In our study, most common pathology found was acute appendicitis (16/50), followed by ileocecal tuberculosis (12/50) and non-tuberculous infectious enterocolitis (11/50). The other pathologies encountered were epiploic appendagitis (3/50), caecal malignancy (2/50), diverticulitis (2/50), Crohn's disease (2/50) and lymphoma (1/50).

Right iliac fossa pathology	Number of persons affected
Acute appendicitis	16
Ileocecal tuberculosis	12
Non-tuberculous infectious enterocolitis	11
Epiploic appendagitis	3
Caecal malignancy	3
Diverticulitis	2
Crohn's disease	2
Lymphoma	1

In our study, enlarged loco regional lymph nodes were noted in 39 patients.

Right iliac fossa lymph nodes size	No. of persons affected
Enlarged (>10 mm)	39
Not significantly enlarged (<10 mm)	11

Among this group, necrotic lymph nodes were found in 13 patients and calcified lymph nodes were found in 5 patients.

Lymph nodal pattern of enlarged lymph nodes	No. of patients
Necrosis	13
Calcified	5

Necrotic lymph nodes were found predominantly in ileocecal tuberculosis (12/12) followed by malignancy (2/3).

Right iliac fossa pathology	No. of patients having necrotic lymph nodes
Ileocecal Tuberculosis	12
Caecal Malignancy	2

DISCUSSION:

The study includes 50 patients, out of which 37 were males & 13 were females. The mean age group affected were 35+/-2.5 years.

1. ACUTE APPENDICITIS



CECT abdomen images showing inflamed appendix with regional inflammatory changes & regional non necrotic lymph nodes in right iliac fossa regions with appendicolith (seen in non-contrast abdomen images).

In our study, most common right iliac fossa pathology found was acute appendicitis (14/50-28%).

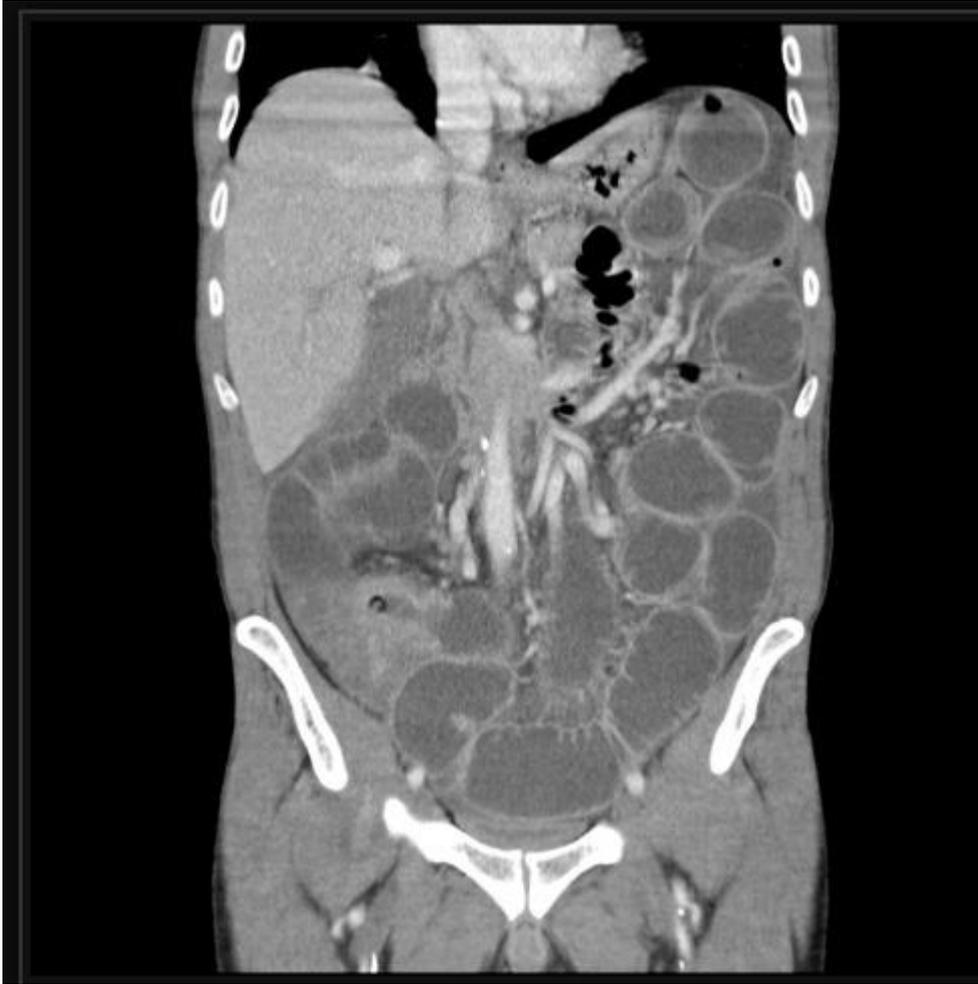
Typical CT findings in patients of acute appendicitis are enlarged appendix (> 7 mm) with thickening of its walls & adjacent mesenteric fat strandings.

Associated signs often include adjacent thickening of appendicolith in form an intraluminal hyperdense focus within appendix is also seen.

Reactive loco regional lymph nodes with homogenous enhancement pattern are often found in these patients.



1. ILEOCAECAL TUBERCULOSIS



CECT abdomen images showing mildly enhancing thickening of terminal ileum & ileocecal junction with features of small bowel obstruction. Necrotic right iliac fossa & retroperitoneal lymph nodes were also seen (not showing in the images).

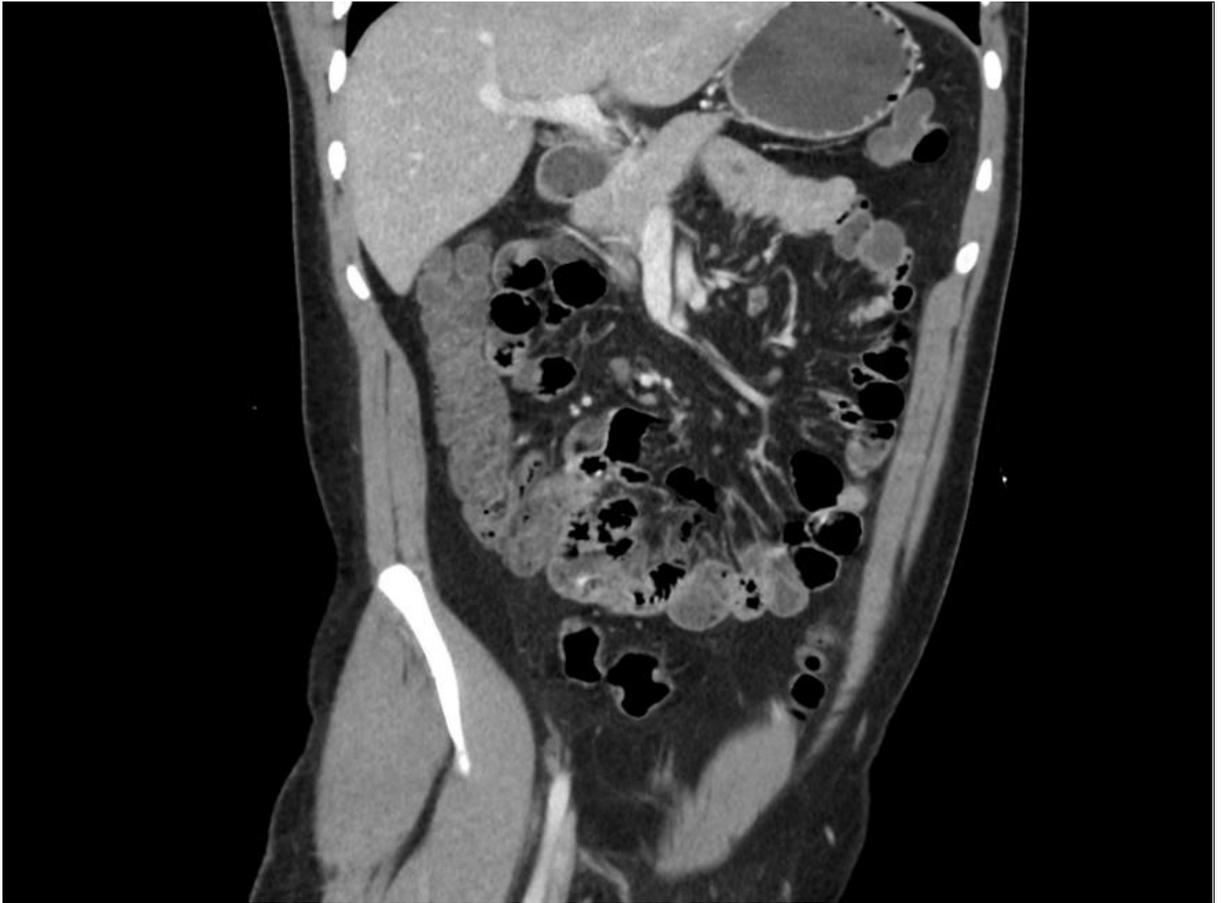
In our study, second most common pathology found was ileocecal tuberculosis (11/50 – 22%).

Typical CT features of gastrointestinal TB show involvement of caecum and terminal ileum in form of enhancing wall thickening which may cause narrowing of its lumen leading to obstruction.

In cases of severe gastrointestinal TB, shrunken & stenosed caecum which is higher up and not in right iliac fossa is often seen.

Heterogeneously enhancing enlarged lymph nodes with non-enhancing necrotic areas are often present in patients with active tuberculosis infection. Sometimes calcified lymph nodes are seen in patients with old Koch's infection.

1. NON-TUBERCULOUS INFECTIVE ENTEROCOLITIS

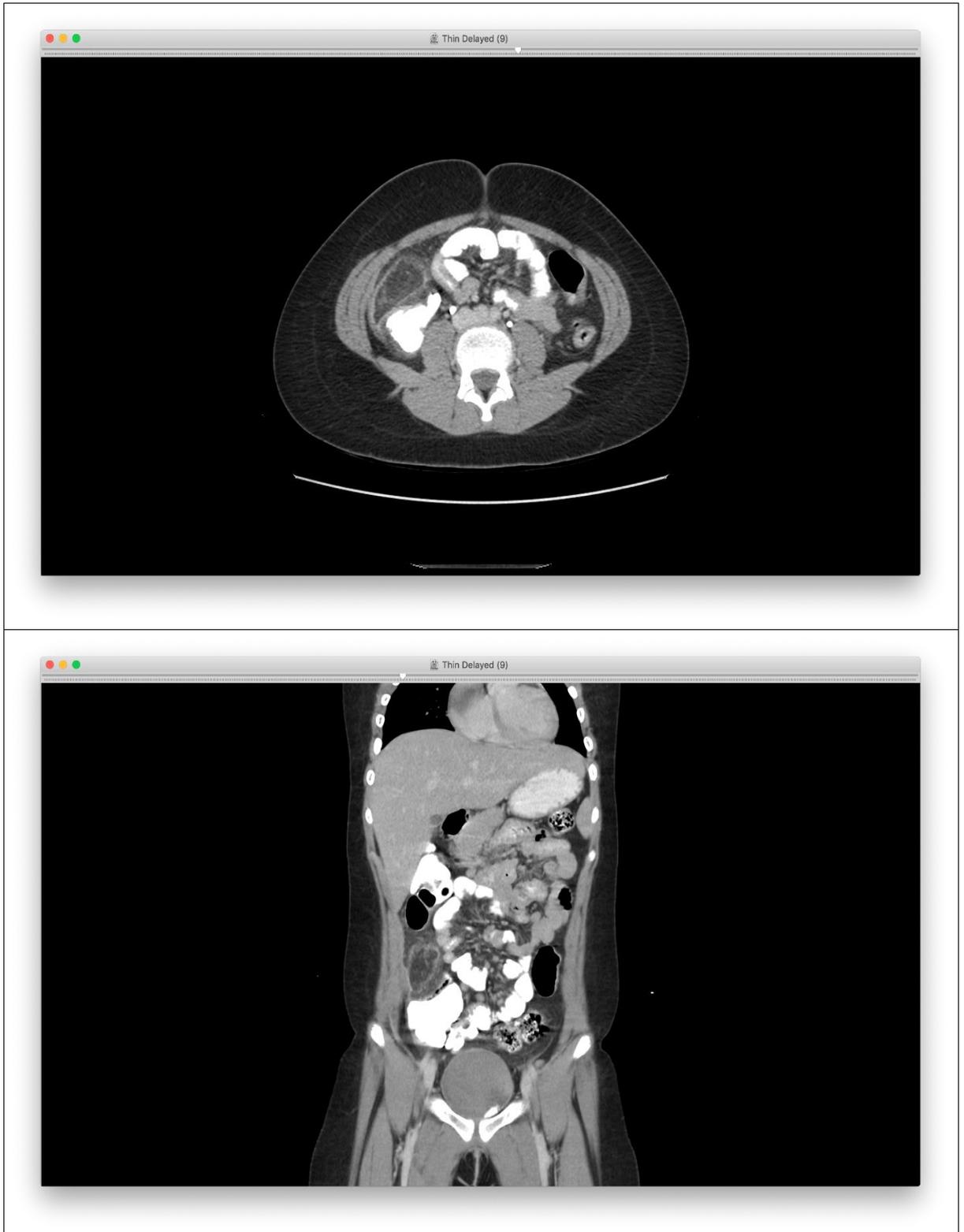


Sagittal CECT scan image showing mildly enhancing thickening of caecum and ascending colon

In our study, third most common pathology found was non tuberculous infective enterocolitis (11/50 – 22%).

CECT findings found are homogenously enhancing circumferential thickening of terminal ileum and cecum with adjacent reactive non necrotic lymphadenopathy, mesenteric fat stranding and free fluid.

1. EPIPLOIC APPENDIGITIS



CECT abdomen images showing changes of epiploic appendicitis in form of oval lesion with hyperattenuating rim in right iliac fossa region.

In our study, fourth most common pathology found was epiploic appendicitis. (3/50-6%)

The CT appearance is that of an oval lesion of fat density with a hyperattenuating rim. Haziness of adjacent colonic fat with thickening of wall of colon may also be present.

1. CAECAL MALIGNANCY





CECT abdomen images showing irregular circumferential heterogeneously enhancing thickening of walls of caecum with luminal narrowing & enlarged necrotic right iliac fossa lymph nodes.

In our study, fifth most common pathology found was caecal malignancy. (2/50-4%).

Typical CT scan findings are in form of enhancing asymmetric thickening of caecum with adjacent heterogeneously enhancing enlarged lymph nodes.

In advanced cases of carcinoma perforation may occur resulting in peritonitis or abscess formation. Perforation can occur above a tumor because of increased intraluminal pressure above the mass or due to erosion of stercoral ulcers.

1. DIVERTICULITIS

In our study, sixth most common pathology found was diverticulitis (2/50-4%).

Imaging features on CT include adjacent mesenteric fluid & fat stranding (greatest at the site of diverticula) with adjacent enhancing thickening of bowel. Colonic diverticula are more common than ileal type. These are located along mesenteric border. Mostly patients are asymptomatic unless complications like fistulae, perforation and obstruction develop.

1. CROHN'S DISEASE





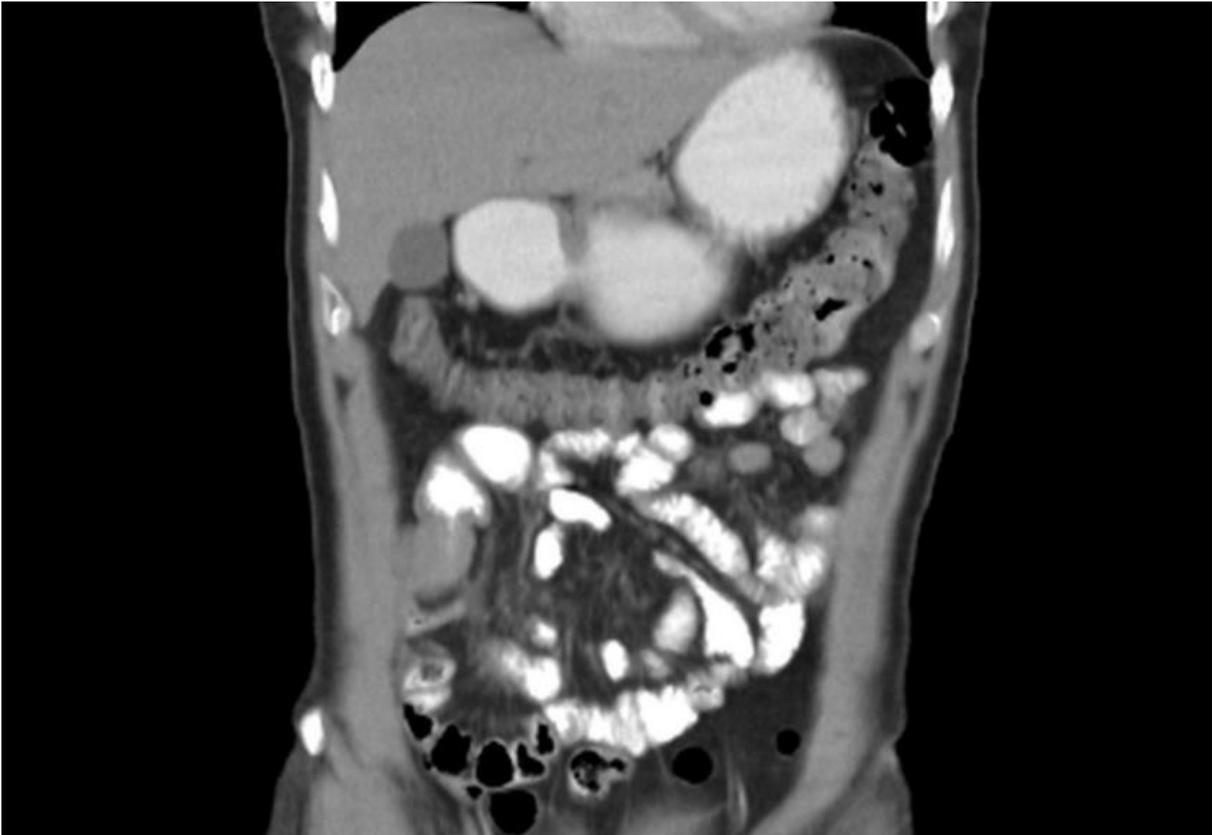
CECT abdomen coronal images showing multiple small bowel strictures with entero-enteral fistulas in active Crohn's disease.

In our study, seventh most common pathology found was crohn's disease (2/50-4%).

Typical CT scan findings show enhancing bowel wall thickening with mesenteric fat strandings and wall edema. Skipped normal areas can help in distinguishing Crohn's disease from ulcerative colitis. Comb's sign i.e., engorged vasa recta that penetrate into the bowel wall is seen in patients with active disease.

Lymph nodes in crohn's disease are non-necrotic & this feature helps us in differentiating it from tuberculosis.

1. LYMPHOMA



CECT sagittal scan images of abdomen showing symmetrical, circumferential, gross mildly enhancing annular segmental thickening of ileal loop. Axial contrast images of the same patient show enlarged homogeneously enhancing lymph nodes in right iliac fossa region.

In our study, eighth most common pathology found was lymphoma (2/50-4%).

Ileocecal lymphoma is of four types - the circumferential, polypoid, ulcerative and aneurysmal types.

In the circumferential type, uniform, homogenous poorly enhancing long segmental bowel wall thickening is seen.

In polypoidal variety, the lymphoma may act as leading point for intussusception.

In ulcerative type, fistulas can develop with surrounding structures.

In aneurysmal type, dilatation of bowel or dilatation of cavity of lymphoid mass can occur.

Bulky, large homogeneously enhancing lymph nodes are associated with lymphoma.

CONCLUSION:

CE CT images of abdomen are very helpful in diagnosis of various right iliac fossa pathologies.

Demonstration of lymph nodal patterns of enhancement and their characteristics can further help in narrowing the diagnosis of right iliac fossa pathologies.

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Conflict of Interest:

Nil

Funding:

Nil

Acknowledgement:

Nil

- [1] Senior Resident, Department of Ophthalmology, L.G Hospital, AMC Met Medical College, Gujarat University, India
- [2] Assistant Professor, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India
- [3] Resident, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India
- [4] Resident, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India
- [5] Senior Resident, Department of Ophthalmology, L.G Hospital, AMC Met Medical College, Gujarat University, India
- [6] Assistant Professor, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India
- [7] Resident, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India
- [8] Resident, Department of Ophthalmology, Shri C.H. Nagri Eye Hospital, Smt. NHL Municipal College, Gujarat University, India.
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