Dr. Kathy Hoegler
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Kitchener ON N2G 3H1
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Aug 2, 2020

Dr. Albert Mensah
421 Greenbrook Drive
Kitchener, ON
N2M 4K1
Phone: 519-578-3510 Fax: 519-578-6040

Dear Dr. Mensah

Re: Umer Sharif Mughal Jun 21, 2005 Age: 15 yr HN: 8380 257 496 CP
519-743-3002 (H) 226-755-2158 (M preferred)

FYI

Yours truly,

Dr. Kathy Hoegler

Mar 12, 2020 Gastroenterology pmp

Received: Mar 12, 2020

McMaster Children's Hospital
HAMILTON HEALTH SCIENCES

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Kathy Ann Hoegler, MD
51 Benton St
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PEDIATRIC GASTROENTEROLOGY

12 March 2020

Patient: Umer Sharif Salaheddin Mughal Date of Birth: 21/6/2005
Date of Visit: 9/3/2020

Dear Dr. Kathy Ann Hoegler

Umer Sharif Salaheddin Mughal is a 14 y.o. 8 m.o. male who was seen in clinic on 9/3/2020. He was seen in clinic with his mother and father.

Presenting Complaint:

Patient Active Problem List
Diagnosis

- Crohn's disease
  - **Disease:** Crohn's disease
  - **Disease Diagnosis Date:** Feb 2020
  - **Disease Location:** Ileal
  - **Induction Therapy:** EEN
  - **TB skin test:** Completed in Feb 2020, negatiave
  - **CXR:** Feb 2020-negative for TB
  - **Varicella:** Reactive serology-Feb 2020
  - **Hepatitis B serology:** Reactive-Feb 2020
  - **Last colonoscopy date:** Feb 2020
  - **Last MRE date:** Feb 2020
  - **Initial labwork prior to diagnosis:** Nov 2019 Hb **105, MCV 69, plat 509**, wbc 6.3 **CRP 71.8**
  - **Fecal calprotectin 3580**
  - **Last TDM: N/A**

Medications
Herbal therapy: no Vitamins: no Probiotics: no

Allergies
He has no allergies on file.

Immunizations
Immunization status: Up to date

Status
General Well Being: well
Energy/Activity Level: decreased
Able to attend school or work: Hasn't been back to school yet as very fatigued.

Nausea: no
Vomiting: no
Abdominal Pain: none (0)
Nocturnal Pain: none (0)
Stool Consistency: Bristol Type 3
Stool Frequency: 1-2 per day
Stool Blood: none
Stool Mucous: none
Nocturnal Stools: no
Perianal Discomfort: no

Extra-Intestinal Manifestations: none

Recent/Intercurrent Illness: None.

Appetite: normal
Dietary Restriction: EEN.
Enteral Feeds: hydrolysate
Gastric Tube: Peptamen 1.5 kcal/cc

Activities
Video Games-Nintendo.

Physical Examination
Weight: 55.4 kg, 49 %ile (Z= -0.03) based on WHO Growth Chart for Canada weight-for-age data using vitals from 9/3/2020., increased
Height: 179.2 cm, 93 %ile (Z= 1.50) based on WHO Growth Chart for Canada stature-for-age data using vitals from 9/3/2020., stable

Wt Readings from Last 3 Encounters:

09/03/20 55.4 kg (49 %, Z= -0.03)*
29/01/20 49.7 kg (29 %, Z= -0.55)*

* Growth percentiles are based on WHO Growth Chart for Canada data.

Ht Readings from Last 3 Encounters:
09/03/20 1.792 m (93 %, Z= 1.50)*
29/01/20 1.79 m (94 %, Z= 1.56)*

* Growth percentiles are based on WHO Growth Chart for Canada data.

Body mass index is 17.25 kg/m².
13 %ile (Z= -1.12) based on WHO Growth Chart for Canada BMI-for-age data using vitals from 9/3/2020.
49 %ile (Z= -0.03) based on WHO Growth Chart for Canada weight-for-age data using vitals from 9/3/2020.
93 %ile (Z= 1.50) based on WHO Growth Chart for Canada stature-for-age data using vitals from 9/3/2020.

Generally: well appearing, comfortable, no acute distress
Chest/CVS: good color, no increased work of breathing, no pallor, no cyanosis
Neuro: alert, interacting, oriented fully, no visible pain or discomfort, sitting comfortably in chair and interactive during history-taking
Full physical examination deferred today.

Physical Exam Summary:
Thin young man with excellent weight gain since starting EEN.

Global Assessment: moderate

Investigations
MRE
Feb 5 2020
FINDINGS:

There is an approximately 25 cm-long segment of distal ileum and terminal ileum showing moderate mural thickening (10 mm), restricted diffusion, increased contrast enhancement, and decreased peristalsis, in keeping with inflammation. There is also mild increased signal and vascular engorgement in the adjacent mesentery. No evidence of stricture or bowel dilatation. No fistula or abscess noted. Small volume pelvic free fluid noted. No wall thickening noted in the cecum or the rest of the colon.

There are multiple small size mesenteric lymph nodes within normal limits. No evidence of enlarged lymph nodes.

Pelvic bones appear normal without signs of enthesopathy. Both sacroiliac joints appear unremarkable. Hip joints are grossly normal.

Although this is not a dedicated study for perianal fistula, no obvious perianal fistula is seen.

The liver, spleen, and pancreas appear unremarkable. Bilateral kidneys have normal size and parenchymal thickness. There is mild pelvicalyceal dilatation in the right kidney predominantly in the upper pole. There is no pelvicalyceal dilatation on the left side. There is a simple, nonenhancing cyst involving the lower pole of the left kidney measuring 17 x 16 mm.

Gallbladder appears unremarkable; no evidence of biliary dilatation.

CONCLUSION:
1) Nonspecific inflammation in the terminal ileum and distal ileum [approximately 25 cm long]. The differential diagnosis includes a broad range of infectious and inflammatory disorders including Crohn's disease.
2) Incidental left renal simple cyst (1.7 cm).

Feb 20 2020
EGD and Colonoscopy
ADVERSE EVENTS: There were no complications.
IMPRESSIONS: 1. Normal EGD
2. Retroflexed views revealed no abnormalities

COLON FINDINGS: The whole colon looks unremarkable. Terminal ileum looks pretty inflammed, friable with ulcers.

Ileum SES-CD score 8: ulcers 2 (0.5-2 cm); ulcerated surface 3 (more than 30%); affected surface 3 (more than 75%); stenosis: 0 (none). total score: 8 (moderate). Retroflexion was not performed. The scope was then completely withdrawn from the patient and the procedure terminated. NG tube was inserted for next EEN treatment based on the conoscopy findings.

COMPLICATIONS: There were no complications.
Terminal ileum iflammation, in keeping with Crohn's Disease.
IMPRESSIONS: Retroflexion was not performed

Pathology
DIAGNOSIS
A. Duodenum D2, biopsies:
- Duodenal mucosa without significant pathological findings

B. Gastric antrum, biopsies:
- Antral type gastric mucosa with moderate chronic, focally active gastritis

- Negative for intestinal metaplasia
- Negative for H. pylori-like microorganisms on special stain
- Negative for granulomas

C. Esophagus - distal, biopsies:
- Squamous mucosa with focal basal increase in number of intraepithelial lymphocytes, otherwise without significant pathological findings
- Intraepithelial eosinophils are not identified

D. Terminal ileum, biopsies:
- Small bowel mucosa with effaced architecture due to chronic active inflammation
- Granulation tissue consistent with an ulcer bed
- Two small, poorly formed granulomas

E. Cecum, biopsies:
- Colonic mucosa with edema, otherwise without significant pathological findings

F. Ascending colon, biopsies:
- Colonic mucosa without significant pathological findings

G. Transverse colon, biopsies:
- Colonic mucosa with elements of mild chronic, non-active colitis:
- Increased cellularity of LP with areas of deep plasmacytosis
- Mild architectural distortion

H. Descending colon, biopsies:
- Colonic mucosa with focal chronic active colitis with cryptitis
- Negative for granulomas

I. Sigmoid colon, biopsies:
- Colonic mucosa increased cellularity of LP and multiple lymphocytic aggregates
- Small focus with several extravasated neutrophils, consistent with focal active inflammation
- Negative for granulomas

J. Rectum, biopsies:
- Colonic mucosa increased cellularity of LP and multiple lymphocytic aggregates
- Small focus with several extravasated neutrophils, consistent with focal active inflammation
- Negative for granulomas

LP= lamina propria

Comment:
Patchy nature of inflammation is appreciated, with focal involvement of the stomach and most prominent, ulcerative changes in terminal ileum. These findings are

consistent with inflammatory bowel disease, and Crohn's disease in particular, upon ruling out of other etiologies, primarily infectious.
Two small, poorly formed granulomas are identified in biopsy from terminal ileum.

Component *Latest Ref Rng & Units*	9/3/2020
LKCS *4.0 - 11.0 x10 9/L*	7.6
ERCS *1.5 - 5.5 x10 12/L*	5.02
HB *130 - 180 g/L*	112 (Lo)
HCT *0.400 - 0.540*	0.376 (Lo)
MCV *82 - 99 fL*	74.9 (Lo)
MCH *27 - 32 pg*	22.3 (Lo)
MCHC *315 - 353 g/L*	298 (Lo)
RDW *11.5 - 15.0 %*	19.1 (HI)
PLT *150 - 400 x10 9/L*	411 (HI)
MPV *9.3 - 12.5 fL*	9.4
RELATIVE NRBCS */100 LKC*	0
ABSOLUTE IG *0.0 - 0.1 x10 9/L*	0.0
ABSOLUTE NEUTS *2.0 - 7.5 x10 9/L*	5.3
ABSOLUTE LYMPHS *1.5 - 4.0 x10 9/L*	1.5
ABSOLUTE MONOS *0.2 - 0.8 x10 9/L*	0.5
ABSOLUTE EOS *0.0 - 0.4 x10 9/L*	0.2
ABSOLUTE BASOS *0.0 - 0.1 x10 9/L*	0.0
Albumin *37 - 47 g/L*	36 (Lo)
LIPASE *4 - 39 U/L*	37
ALT *<25 U/L*	14
AST *14 - 35 U/L*	14
Creatinine, Ser *50 - 71 umol/L*	62
PHOSPHATASE,ALK *127 - 517 U/L*	84 (Lo)
GGT *7 - 21 U/L*	18
CRP *<1.1 mg/L*	5.1 (# H)

IRON 12 - 31 umol/L	8 (Lo)
IBC 40 - 80 umol/L	77
TRANSFERRIN SAT 0.20 - 0.50 fract	0.10 (Lo)
TRANSFERRIN 2.20 - 3.70 g/L	3.19 (HI)
FERRITIN 23 - 100 ug/L	15

Impression

Umer is a 14 year old male diagnosed in Feb 2020 with ileal Crohn's disease and microscopic gastritis with two poorly formed granulomas present on biopsies from the TI. MRE showed approximately 25 cm of small bowel involvement of distal and terminal ileum. No evidence of fistulizing disease on perianal inspection at the time of the colonoscopy or findings consistent with perianal disease on MRE. There was an incidental finding of a left renal simple cyst (1.7cm) on MR. For induction therapy Umer was admitted to McMaster hospital and started on EEN by NG tube He repots that his prescribed volume of (1920 ml/day of Peptamen 1.5 kcal/cc for a caloric intake of 2880 kcal/day) is well tolerated and he has had over 5 kg of weight gain since diagnosis and reports feeling improved, although still struggles with fatigue. He has not returned to school yet, but we have encouraged him to attend, even if he can only manage 1 class per day. Patient-specific teaching was done including a review of Crohn's disease, Umer's recent diagnostic test and lab work results, induction versus maintenance therapy and plans for on-going treatment. We discussed need to start immunomodular therapy overlapping with EEN. Family to review live-vaccine status before starting MTX. Side-effect profile of methotrexate was discussed including nausea, liver toxicity, bone marrow suppression, risk of infection and teratogenicity (so must be avoided if sexually active or effective birth control method). Methotrexate is an immunosuppressant so LIVE vaccines must not be given while on methotrexate. Introduced idea of biologics if MTX is not completely effective.

Plan

1. Family to review vaccine status (note: blood work results reviewed after clinic shows Umer is immune to varicella)
2. Start MTX 25 mg SC weekly (15 mg/m2) and 5 mg PO folic acid.
3. Blood work q2 weeks after MTX start x 2, then monthly x 2, then q3-4 months ongoing.
4. Patient involved in DEXA study, next scan scheduled on April 6th with FU.
5. Dietician to see at visit on April 6 regarding re-starting solid foods.

Follow Up

IBD clinic in 1 months

Emily Brackenridge, RN(EC), MN-NP (Paeds)
Pediatric Gastroenterology, Inflammatory Bowel Disease Center
McMaster Children's Hospital

Reviewed and seen by Mary Zachos MD, FRCPC

Sincerely,

Mary Zachos MD, FRCPC

CC:
No Recipients

Jul 22, 2020 Gastroenterology pmp

Received: Jul 22, 2020

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PEDIATRIC GASTROENTEROLOGY

22 July 2020

Patient: Umer Sharif Salaheddin Mughal Date of Birth: 21/6/2005
Date of Visit: 20/7/2020

Dear Dr. Kathy Ann Hoegler

Umer Sharif Salaheddin Mughal is a 15 y.o. 0 m.o. male who was reviewed by telephone/ OTN on 20/7/2020 with his mother and father.
Informed verbal consent was obtained from this patient to communicate and provide care using virtual and other telecommunications tools. This patient has been explained the risks related to unauthorized disclosure or interception of personal health information and steps they can take to help protect their information. We have discussed that care provided through video or audio communication cannot replace the need for physical examination or an in person visit for some disorders or urgent problems and the patient understands the need to seek urgent care in an Emergency Department as necessary.
Time 10:40-11am

Presenting Complaint

Patient Active Problem List
Diagnosis
- Crohn's disease
  Disease: Crohn's disease
  Disease Diagnosis Date: Feb 2020
  Disease Location: Ileal
  Induction Therapy: EEN
  TB skin test: Completed in Feb 2020, negatiave
  CXR: Feb 2020-negative for TB

Varicella: Reactive serology-Feb 2020
Hepatitis B serology: Reactive-Feb 2020
Last colonoscopy date: Feb 2020
Last MRE date: Feb 2020
Initial labwork prior to diagnosis: Nov 2019 Hb 105, MCV 69, plat 509, wbc 6.3 **CRP 71.8**
Fecal calprotectin 3580
Last TDM: N/A

Interval History:
Umer is a 14 year old male diagnosed in Feb 2020 with ileal Crohn's disease and microscopic gastritis with two poorly formed granulomas present on biopsies from the TI. MRE showed approximately 25 cm of small bowel involvement of distal and terminal ileum. Umer was treated with EEN by NG tube for induction the methotrexate for maintenance.Dose 1 of MTX Tuesday, March 30th but stopped in June when the prescription ran out and the family did not realize it was meant to be continued.
Umer has been well with good energy level and appetite. No nausea, vomiting, abdominal pain or diarrhea reported. No regurgitation, retrosternal burning or dysphagia. Bowel movements are formed, occuring daily with no blood or mucus. No perianal discomfort or discharge. No unexplained fevers or significant intercurrent illnesses. No skin, joint pain, mouth sores or eye complaints.

Medications

Current Outpatient Prescriptions:
• folic acid 5 mg tablet, Take 5 mg by mouth once a week. Take one 5 mg tablet 24-48 hours after methotrexate dose., Disp: 12 tablet, Rfl: 1
• methotrexate sodium (METOJECT SUBCUTANEOUS) 25 mg/0.5 mL prefilled syringe, Inject 1 Syringe (25 mg total) subcutaneously once a week., Disp: 12 Syringe, Rfl: 1
Ended first 12 Mtx June 1st. 0.5mls/25mgs then stopped, now resuming.

Investigations

Component *Latest Ref Rng & Units*	10/7/2020
LKCS *4.0 - 11.0 x10 9/L*	6.4
ERCS *4.5 - 6.5 x10 12/L*	5.40
HB *130 - 180 g/L*	140

HCT *0.400 - 0.540*	0.425
MCV *82 - 99 fL*	78.7 (Lo)
MCH *27 - 32 pg*	25.9 (Lo)
MCHC *315 - 353 g/L*	329
RDW *11.5 - 15.0 %*	13.6
PLT *150 - 400 x10 9/L*	288
MPV *9.3 - 12.5 fL*	11.6
RELATIVE NRBCS */100 LKC*	0
ABSOLUTE IG *0.0 - 0.1 x10 9/L*	0.0
ABSOLUTE NEUTS *2.0 - 7.5 x10 9/L*	3.9
ABSOLUTE LYMPHS *1.5 - 4.0 x10 9/L*	1.9
ABSOLUTE MONOS *0.2 - 0.8 x10 9/L*	0.5
ABSOLUTE EOS *0.0 - 0.4 x10 9/L*	0.1
ABSOLUTE BASOS *0.0 - 0.1 x10 9/L*	0.0
Albumin *42 - 53 g/L*	48
LIPASE *<149 U/L*	86
ALT *22 - 49 U/L*	11 (Lo)
AST *24 - 49 U/L*	22 (Lo)
PHOSPHATASE,ALK *88 - 315 U/L*	138
GGT *<18 U/L*	11
BILIRUBIN,TOTAL *<15 umol/L*	8
CRP	5.2

<10.0 mg/L	
FERRITIN *SEE COMMENT ug/L*	16
25-OH,VITAMIN D *nmol/L*	68.1

Impression & Plan
Umer is a 15 y.o. 0 m.o. male with Crohn's disease initially treated with EEN then maintenance methotrexate. However, the family did not realize the methotrexate was meant to be continued as maintenance therapy and he stopped therapy in June. He will resume therapy now and has a new prescription of 25mg subcut weekly. We have sent an outpatient requisition for surveillance bloodwork and Covid precautions were reviewed and instructions on what to look out for and when to call GI team (including any fever, gi or respiratory symptoms, exposures or any other concerns). Medication scheduling may need to be adjusted if any signs or risk of intercurrent illness.
Follow Up
3months

Sincerely,

Mary Zachos MD, FRCPC
Division of Gastroenterology and Nutrition
Department of Pediatrics, McMaster Children's Hospital

CC:
No Recipients