From: "ROOT" <root@sctimst.ac.in>
To: "ROOT" <root@sctimst.ac.in>
Date: 25/04/2022 01:25 PM
Subject: Invitation of CCR/CPC

Sir/Madam,
Greetings from AIIMS SET Facility, New Delhi!!

The Live Clinical Combined Round/ Clinical Pathological Conference **is scheduled to be held on 29.03.2022 in LT-I, AIIMS, New Delhi. The topic of Clinical Combined Round/Clinical Grand Round is as under:-**

CLINICAL COMBINED ROUND:
Date : 26.04.2022
Venue : LT-I, AIIMS
Time : 2.30 PM to 3.30 PM
YouTube link:- CCR will be live transmitted on: shorturl.at/zlMSU

	TOPIC OF CLINICAL COMBINED ROUND	PRESENTING DEPARTMENT
1.	"Where there is a "BRONCHOSCOPE" there's a way"	PULMONARY MEDICINE
2	"Journey of an Adopted hand"	PLASTIC SURGERY

CLINICAL PATHOLOGICAL CONFERENCE:
Date : 26.04.2022
Venue : LT-I, AIIMS
Time : 4.00 PM to 5.00 PM
YouTube link:- CPC will be live transmitted on: shorturl.at/zlMSU

CLINICOPATHOLOGY CONFERENCE

ALL INDIA INSTITUTE OF MEDICAL SCIENCES

Clinical Discussion: Prof. Narayan Prasad **Date:26th April 2022**

Pathology Discussion: Dr. SaumyaranjanMallick

Re: Patient A, date of birth 22 July 2005

Informant: Father; history reliable; resident of Jaipur, Rajasthan

Chief complaints: This 16-yr-old boy is a known patient of steroid sensitive nephrotic syndrome with disease in sustained remission since 2013. In November 2021, he presented to the hospital with a history of recurrent fever and bilateral neck lumps thrice in the last three years, with current symptoms for the past two weeks.

History of present illness: The child first developed fever and neck lumps in March 2018. Fever was intermittent, moderate grade, up to 102°F, not associated with chills or rigors, and was responsive to antipyretics. Simultaneously, he had developed large nodular lumps in the neck and axillae. The lumps were firm, and not associated with any pain, redness, warmth or difficulty in swallowing, speech, or neck movements. There were no similar lumps elsewhere. During this illness, the child was evaluated at a hospital in Jaipur with blood investigations, chest X ray and CT of the chest. The fever and neck swellings resolved spontaneously after one week without any specific treatment. The child was asymptomatic and did not seek care until the recurrence of neck lumps and fever 21 months later.

In January 2020, the child was brought to this Institute with fever and swellings in the neck and axillae for one week. Similar to the first episode, fever was intermittent, of moderate grade, and responsive to antipyretics. Following inpatient evaluation including blood tests and imaging, the diagnostic test was performed. Subsequently, the child received therapy for 6 months, and was also initiated on intravenous infusions of IV immunoglobulin, which have been continued over the last two years every 4-12 weeks. Fever and lumps subsided within a fortnight of initiating therapy, and the child remained well for the next 18-months.

In November 2021, the parents noted a recurrence of small nodular swellings on both sides of the neck. Over two weeks, these lumps progressively increased in number and size, and were grossly visible. There was associated low grade intermittent fever, which did not rise higher than 100.5°F, and responded well to oral paracetamol.

There was no history of cough, coryza, rapid breathing or respiratory distress, abdominal distension or pain, diarrhea, or blood in stools during the current or past episodes of illness. There was no history of bone pains, night sweats, weight loss, anorexia, bleeding from any site, purpura or petechiae. There is no history of hoarseness, swelling face, change in voice, snoring or features suggesting obstructive sleep apnea. There was no known history of contact with a patient with active tuberculosis, and pet or wild

animals, or animal or insect bite. Fever was never associated with chills, rigors, myalgia, body aches, headache, night sweats or rash. There was no history of redness or itching of eyes, jaundice, or joint pains or swelling.

Past history: At two years of age, the child had developed periorbital edema followed by anasarca. Based on results of urine and blood biochemistry, summarized in **Table 1**, the child was diagnosed as nephrotic syndrome in June 2007. The edema and proteinuria resolved following therapy with oral prednisolone. However, the disease relapsed whenever steroids were discontinued or given on alternate days, leading to a diagnosis of steroid-dependent nephrotic syndrome in 2008.

Figure 1 indicates that the child had a difficult-to-treat disease course over the next 4-years, which did not respond satisfactorily to therapy with alternate day prednisolone, levamisole on alternate days, a 12-weeks course of oral cyclophosphamide, and twice daily therapy with mycophenolate mofetil (MMF). By 2012, the child had developed signs of corticosteroid toxicity, including Cushingoid body habitus, obesity (body mass index 3.4 SDS for age), hypertension and bilateral early subcapsular cataracts. In view of difficult-to-treat disease with significant steroid toxicity, the child received therapy with three IV doses of rituximab administered 1-week apart in May 2012. The disease remained in remission for 7 months, following which steroid-dependent relapses recurred. In view of high-threshold steroid dependence, a second course of two doses of rituximab was given in March 2013. Further, therapy with MMF was initiated pre-emptively in May 2013 and continued till May 2015. Apart from an episode of transient leukopenia associated with fever while on therapy with MMF, the parents do not recall any therapy-related concerns. There have been no disease relapses since March 2013, including during the recent episodes of febrile illness. The history with regard to disease relapses is also substantiated by the records of urine protein, symptoms and medications, diligently maintained by the parents during 2007-2018.

Key laboratory investigations performed during 2007 to 2015 are summarized in **Table 1**. Since the child was well, parents communicated with the treating team over the telephone and by email over 2015-2017 and the child did not review at the Institute after 2015 until presentation with fever and neck lumps in 2020.

Birth and development history: The child was born at term by normal vaginal delivery with a birth weight of 2500 g. The antenatal and perinatal period was uneventful. He attained developmental milestones at the appropriate age and is currently school-going, preparing to take the class X Board examinations in 2022. Throughout childhood, he has received age-appropriate milestones, with some deviations from the schedule as necessitated by immunosuppressive medications.

Family and socioeconomic history: There is no family history of kidney disease, fever, lumps or tuberculosis. The child's father is a business owner, while the mother is a homemaker. They reside in a nuclear family in a *pukka* house in Jaipur. The father has extensive acrofacial vitiligo, and the mother has bronchial asthma. His sibling, a 19-yr-old girl, is asymptomatic. Two paternal aunts and the paternal grandmother have a history of hypothyroidism.

Examination: On examination, at admission in November 2021, this 16-yr-old boy was alert, conscious, oriented, cooperative to examination, and comfortable but anxious. The heart rate was 68/minute, respiratory rate 18/minute, axillary temperature 99.2°F, blood pressure 100/58 mm Hg right arm supine, and capillary refill time under two seconds. Body weight was 49.1 kg (standard deviation score, SDS -0.81), height 159 cm (-1.28 SDS), and body mass index 19.38 kg/m^2 (-0.19 SDS). Sexual maturity was rated at stage 4 (pubertal).

There was no pallor, icterus, cyanosis, clubbing, edema or skin rash. There were multiple enlarged lymph nodes in the neck bilaterally, including the anterior and posterior cervical chains and submandibular location. The largest lymph nodes were the submandibular ones, measuring 3x3 cm, while bilateral posterior cervical lymph nodes were enlarged up to 3x2 cm. All the lymph nodes were mobile, non-tender, non-matted, and soft to firm in consistency, with normal skin over the nodes without any draining sinuses. There were no palpable nodes in the axilla and inguinal regions. Examination of the oral cavity, and oro- and nasopharynx, including tonsils, was unremarkable.

Breathing was abdomino-thoracic, without use of accessory muscles of respiration. The trachea was central and chest rise symmetrical. Bilateral air entry was equal and there were no adventitious sounds. Cardiovascular examination showed normal precordium, with the apex beat in the left fifth intercostal space, 1 cm medial to the midclavicular line. The first and second heart sounds were normal; there was no S3 gallop or murmurs. The abdomen was not distended and did not have any scars, sinuses or dilated veins, all quadrants of the abdomen moved normally with respiration. A soft liver was palpable 1 cm below the costal margin with a span of 8 cm; spleen was not palpable. Central nervous system examination, including cranial nerves, power, and motor and sensory system was normal. Examination of the musculoskeletal system and the spine did not suggest any abnormalities.

Evaluations: Blood investigations performed during evaluation at Jaipur in March 2018, and at AIIMS in January 2020 and November 2021 are summarized below (**Table 2)**. Evaluation in 2020 had included complete blood counts, C-reactive protein, erythrocyte sedimentation rate, procalcitonin, rapid malarial antigen, dengue IgM, Widal, antinuclear antibody, PCR for Epstein-Barr virus, and antibodies to hepatitis C and HIV, and tuberculin test.

Evaluation in 2020 showed persistently low levels of immunoglobulin G (IgG) and normal levels of IgA. Therapy with intravenous infusions of IgG (IVIG) was initiated, and continues to be given once every 1-3 months.

Chest radiographs performed in 2018, 2020 and 2021 are enclosed. Ultrasonography examination of the neck, done in 2020 and 2021, revealed enlarged bilateral submandibular and anterior and posterior cervical lymph nodes, with the largest nodes

measuring 3x2 cm, with no evidence of necrosis or calcification. Abdominal ultrasonography in 2018 had shown no organomegaly or lymphadenopathy; bilateral kidneys were normal in size (10x4.8 cm and 10x6 cm), shape and echotexture. Repeat ultrasonography, in 2021, showed enlarged mesenteric lymph nodes, with the largest measuring 0.7x0.5 cm. The liver and spleen were not enlarged.

Computerized tomography (CT) of the chest was performed in 2018, and that of the chest and abdomen in January 2020. In December 2021, fluorodeoxyglucose positron emission tomography (FDG PET)-CT of the whole body was performed.

A diagnostic test was performed in January 2020; the findings were reconfirmed on a repeat study in December 2021.

Imaging enclosed

Chest x ray films of March 2018, January 2020 and November 2021

Fig. 1. Course of steroid sensitive nephrotic syndrome in the patient, and therapies received during 2007-2015. *The patient is in sustained remission from nephrotic syndrome since 2013.*

Table 1. Investigations performed during the course of nephrotic syndrome

Investigation	**June 2007**	**July; October 2008**	**June 2009**	**March; October 2010**	**January; December 2011**	**March 2012**	**March 2013**	**August 2014**	**January 2016**
Hemoglobin, g/dL	12.0		12.2	11.7	12.2	13.6		11.2	11.7
Total leukocyte count, per mm^3	6800		6400	7100	7400	18000		9590	9200
Differential leukocyte count, %*	55/42/1/2		58/40/1/1		45/46/7/2	72/24/3/1		41/52/3/4	69/26/4/1
Platelets x 10^3, per mm^3	290		260	360	360	537		264	216
Urea, mg/dL		24; 21	20	30	31; 27	64	30	29.4	25.4
Creatinine, mg/dL	0.57	0.5; 0.7	0.53	0.9	0.81; 0.85	0.6	0.4	0.48	0.46
Sodium/potassium, mEq/L	139/3.8		140/4.1	145/4.0					136.5/4.7
Calcium/phosphorus, mg/dL		8.6; -/-							8.9/5.3
Total protein, g/dL	4.2	6.8; -		5.9; 6.2	5.2; 6.9	4.3			
Albumin, g/dL	1.7; 2.2	4.0; 1.2	3.0	3.6; 3.5	1.9; 3.8	2.1	3.7	3.95	
SGOT/SGPT, U/L	-/23		155/40			14/20	18/30		
Serum alkaline phosphatase, U/L		115; -							148
HbA1c, %					5.2	5.3			
Cholesterol, mg/dL	361; 400	158; -		212; 200	396; 175			119	
Glucose, mg/dL			136					92	84
CD19+ cells, as % of CD45+ cells						2; <1**	8; <1***		
Urine protein	4+	3+; 3+	3+	Nil	4+	4+	Nil		Nil
Urine microscopy	1-2 white cells	-; 8-10 white cells	1-3 red, cells						
Urine protein to creatinine, mg/mg		6.1; 13.7		23.1/0.05	8.0; 0.10				

* Neutrophils/lymphocyte /monocytes/eosinophils; **Following two; three rituximab injections in May 2012; *** Before and after two doses of rituximab

Table 2. Investigations during 2018-2021

Investigation	**March 2018**	**January 2020**	**November 2021**
Hemoglobin, g/dL	9.8	7.8	12.2
Total leukocyte count, per mm^3	4300	5970	4430; 4100
Differential leukocyte count, %*	45/47/7/1	48/42/8/2	56/27/12/5
	497	520	270

Platelets x 10^3, per mm^3			
Peripheral smear	Not available	Microcytic hypochromic red cells; pencil & target cells; no atypical cells**	Normocytic normochromic red cells; no atypical cells
ESR, mm in first hour	35	18	20
Urea/Creatinine, mg/dL	30.9/0.35	20/0.40	21/0.50
Sodium/potassium, mEq/L		139/4.6	140/4.1
Calcium/phosphorus, mg/dL		8.8/4.7	8.7/4.6
Total protein/albumin, g/dL	6.0/3.6	5.6/3.7	5.2/3.5
SGOT/SGPT, U/L	21/37	15/16	29/27
Alkaline phosphatase, U/L	176	418	93
Cholesterol, mg/dL		143	138
Uric acid, mg/dL	1.9	2.0	2.7
Lactate dehydrogenase, U/L		411	599
Fibrinogen, mg/dL			413
Ferritin, µg/L		17.5; -	209
CRP, mg/L; procalcitonin, ng/mL		24.3; -	18; 0.1
Antinuclear antibody, by IF		Negative	Negative
Immunoglobulin (Ig) G, mg/dL		142; 280	350
IgA; IgM, mg/dL		<10; 163	
Blood culture, bacterial	Sterile	Sterile	Sterile
Widal test	Negative	Negative	Negative
Quantitative buffy coat for malaria		Negative	Negative
Dengue IgM		Negative	Negative
Antibody to HIV 1 and 2		Negative	Negative
Epstein-Barr virus, copies per mL		Negative	Negative
Gene-Xpert on gastric aspirate		Negative	Negative
Urine protein	Nil	Nil	Nil
Urine microscopy	No cells, casts or crystals	No cells, casts or crystals	No cells, casts or crystals
Urine protein to creatinine, mg/mg		0.25	0.2

CRP C reactive protein;ESR erythrocyte sedimentation rate; HIV human immunodeficiency virus; IF immunofluorescence

* Neutrophils/lymphocyte /monocytes/eosinophils

Kindly attend the CCR/CPC on the above mentioned Date/Time/Venue.

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Thanks & Regards
Kamal tiwari
Content Developer
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