INTRODUCTION

Niemann-Pick disease type C (NPC) is a lysosomal storage disease with heterogeneous clinical manifestations. The age at presentation varies from perinatal period to adult age. Visceral involvement (liver, spleen, lung) and neurological or psychiatric involvement may develop at different times and independently of each other. It is caused by the mutation in NPC1 and NPC2 genes.

Herein, we present three NPC diagnosed infants with different clinical manifestations.

CASE 1

- 4-day-old boy was referred to our center with hepatosplenomegaly. It was learned that the abdominal circumference was large in antenatal follow-ups.
- The patient had also a family history of first-degree consanguinity.
- On admission, massive hepatosplenomegaly was observed (Fig.1a).
- Laboratory investigations revealed cholesterol and thrombocytopenia.
- LysoSM509 [396 nmol/L (1-33)], chitotriosidase [456 nmol/h/mL (0-120)] levels were found high and a novel homozygous variant of c.2039dupT (p.L680Ffs*9)(p.Leu680PheTer9) was detected in the NPC1 gene.

CASE 2

- 5-day-old girl was admitted to hospital with the complaint of jaundice.
- Due to history of a sibling who died because of NPC, genetic analysis was performed and a homozygous c.434 T>A(p.Val145Glu) mutation was detected in the NPC2 gene.
- At the age of 3 months, hypotonicity, hepatomegaly and progressive severe pulmonary alveolar proteinosis (PAP) occurred (Fig.1b).
- Patient passed away due to multi organ failure.

CASE 3

- 6-month-old age girl was referred with hepatomegaly and abnormal liver function tests.
- Abdominal ultrasonography revealed liver nodules, splenomegaly, and diffuse ascites.
- Laboratory findings were consistent with acute liver failure.
- She had a family history of first-degree consanguinity.
- Chitotriosidase [237 nmol/h/mL (0-120)] level was found to be elevated.
- A homozygous c.2009G>T (p.Cys670Phe) mutation was detected in the NPC1 gene.

CONCLUSION

- NPC is a clinically heterogeneous lysosomal disorder and can present at any age. It should be kept in mind in cases with a family history and multiple organ involvement.
- Pulmonary involvement is an important manifestation. Although it is known to be a rare entity in NPC patients, recent studies suggest that lung involvement is more common than anticipated. It is stated that patients with NPC2 usually present with respiratory distress in early infancy, which is rather unusual with NPC1.
- Herein, we showed that NPC can present with antenatal hepatosplenomegaly, PAP and acute liver failure and the disease can be observed at any age with different clinical manifestations.

Fig.1: (a) Massive hepatosplenomegaly in Case 1. (b) Chest X-ray findings of Case 2 consistent with PAP.