



## PHOTO CLINIC

# Depakine Induced Pseudo-Pelger-Huet Anomaly

Nasim Valizadeh<sup>1,2</sup>, Nasim Hoshangian Tehrani<sup>3</sup>

<sup>1</sup>Assistant Professor of Hematology and Medical Oncology, Tehran University of Medical Sciences, Tehran, Iran

<sup>2</sup>Iran University of Medical Sciences, Tehran, Iran

<sup>3</sup>Assistant professor of Internal medicine, Iran University of Medical sciences, Tehran, Iran

## ARTICLE INFO

### Article History:

Received: 12.08.2017

Accepted: 01.10.2017

### \*Corresponding author:

Nasim Valizadeh

Hematology-Oncology and Stem Cell Transplantation Research Center, Tehran University of Medical Sciences, Tehran, Iran

Tel: +98 9125474755

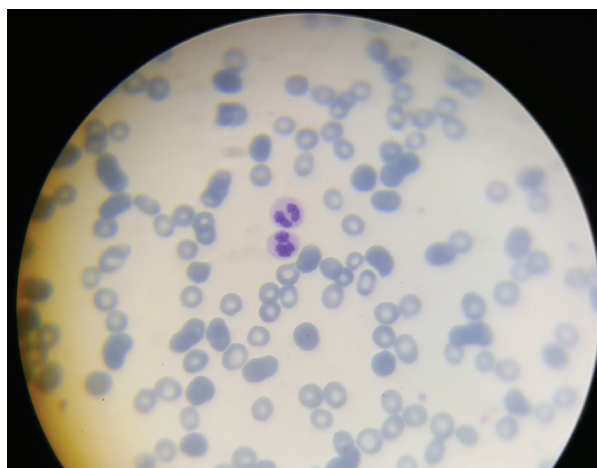
Email: [nsedaha0@gmail.com](mailto:nsedaha0@gmail.com)

Please cite this article as: Valizadeh N, Hoshangian Tehrani N. Depakine Induced Pseudo-Pelger-Huet Anomaly. IJBC 2017; 9(4): 132-133.

Pelger-Huët anomaly is a rare benign autosomal-dominant anomaly with incidence of about 1 in 6000 persons. Pelger-Huët cells are morphologically abnormal neutrophils that are either bilobed or completely unsegmented.<sup>1,2</sup> It should be differentiated from acquired or pseudo-Pelger-Huët anomaly (PPHA), which has similar morphology and association with different pathological states like myelodysplasia, Acute myeloid leukemia (AML), chronic myelogenous leukemia (CML) as well as with certain infections and drugs (Valproate and Ibuprofen).<sup>3-9</sup>

An 18-year-old woman who was a case of mental retardation since early childhood was admitted with episodes of epistaxis and pancytopenia. She had a history of end stage renal disease on chronic intermittent dialysis and history of seizure on sodium valproate and nitrazepam. Since 1 month ago valproate dosage was increased from 200 mg twice a day to 500 mg twice a day. Physical examination showed pallor, and inability to speak and follow orders. There was no lymphadenopathy and organomegaly. Laboratory findings showed WBC: 3300/ $\mu$ L, Hb: 6 gr/dl, Platelet: 45000/ $\mu$ L, Creatinine: 7 mg/dL. Peripheral blood smear showed many bi-lobed neutrophils (pseudo pelger huet cells) (Figure 1).

We considered a decrease in valproate dosage and initiation of folate and B12 supplement for her. In the follow-up visits, leukocyte counts had increased to 5000/ $\mu$ L. Bone marrow aspiration and biopsy revealed marked hypocellular marrow with evidence of dyserythropoiesis



**Figure 1:** pseudo pelgerhuet anomaly in neutrophils.

and dysmyelopoiesis. Cytogenetic study and chromosomal breakage should be considered on bone marrow aspiration of subjects with Pelger-Huet neutrophils to rule out the diagnosis of hereditary forms of myelodysplastic syndromes and Fanconi anemia in patients with Pelger-Huet anomaly.

**Conflict of Interest:** None declared.

## References

- Hoffmann K, Dreger CK, Olins AL, Olins DE, Shultz LD, Lucke B, et al. Mutations in the gene encoding

- the lamin B receptor produce an altered nuclear morphology in granulocytes (Pelger-Huët anomaly). *Nat Genet.* 2002; 31(4):410-4. doi: 10.1038/ng925. PubMed PMID: 12118250.
2. Best S, Salvati F, Kallo J, Garner C, Height S, Thein SL, et al. Lamin B-receptor mutations in Pelger-Huët anomaly. *Br J Haematol.* 2003; 123(3):542-4. PubMed PMID: 14617022.
  3. Shetty VT, Mundle SD, Raza A. Pseudo pelger-huet anomaly in myelodysplastic syndrome: hyposegmented apoptotic neutrophil? *Blood.* 2001; 98:1273–5. doi:10.1182/blood.V98.4.1273.
  4. Wang E, Boswell E, Siddiqi I, Lu CM, Sebastian S, Rehder C, et al. Pseudo-pelger-huet anomaly induced by medications: a clinicopathologic study in comparison with myelodysplastic syndrome-related pseudo-pelger-huet anomaly. *Am J Clin Pathol.* 2011; 135(2): 291–303. doi: 10.1309/AJCPVFY95MAOBKRS. PubMed PMID: 21228370.
  5. Gear JS, Cassel GA, Gear AJ, Trappler B, Clausen L, Meyers AM, et al. Outbreak of marburg virus disease in Johannesburg. *Br Med J.* 1975; 4(5995): 489–93. doi:10.1136/bmj.4.5995.489.
  6. Singh NK, Nagendra S. Reversible Neutrophil Abnormalities Related to Supratherapeutic Valproic Acid Levels. *Mayo Clin Proc.* 2008; 83(5):600. doi: 10.4065/83.5.600. PubMed PMID: 18452694.
  7. Moreira AM, Vieira LM, Rios DR, Carvalho M, Dusse LM. Acquired Pelger-Huet anomaly associated with ibuprofen therapy. *Clin Chim Acta.* 2009; 409(1-2):140-1. doi: 10.1016/j.cca.2009.08.006. PubMed PMID: 19689923.
  8. Deutsch PH, Mandell GL. Reversible Pelger-Huët anomaly associated with ibuprofen therapy. *Arch Intern Med.* 1985; 145(1):166. PubMed PMID: 3970634.
  9. Ayan MS, Abdelrahman AA, Khanal N, Elsallabi OS, Birch NC. Case of acquired or pseudo-Pelger-Huët anomaly. *Oxf Med Case Reports.* 2015; 2015(4):248-50. doi: 10.1093/omcr/omv025. PubMed PMID: 26634137. PubMed Central PMCID: PMC4664885.