

## Compound Heterozygote of Hb D-Punjab and Hb D-Iran; An Interesting Finding

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A 29 years-old, primigravida, during antenatal evaluation was referred for Hemoglobin capillary electrophoresis. She was a resident of Delhi and was asymptomatic hitherto. Her physical examination was essentially normal. The blood profile showed hemoglobin (Hb) concentration of 11.3 g/dL, red cell mean corpuscular volume 81.2 fL, mean corpuscular hemoglobin 26.2 pg, mean corpuscular hemoglobin concentration 32.3 g/dL, total red cell count of  $4.31 \times 10^6/\mu\text{L}$  and red cell distribution width of 14.9% (CV). The hemoglobin capillary zone electrophoresis (Minicap Sebia hemoglobin capillary electrophoresis) showed Hb A 0.4%, Hb A2 2.2% and Hb D 97.4% with a bifid peak in D zone (zone D) (Fig. 1a). To further char-

acterize this bifid peak, Hb HPLC (Biorad variant II) was done which showed Hb A 4.10%, Hb D 45.60% and Hb A2 (D Iran) 46.20% with retention times 2.150, 3.620 and 4.002 respectively (Fig. 1b) thereby confirming the patient to be a compound heterozygote of Hb D-Iran and Hb D-Punjab. Her family Hb HPLC study showed her father was heterozygous Hb D-Iran (Fig. 1c), mother to be heterozygous Hb D-Punjab (Fig. 1d) while husband's Hb HPLC was normal (not shown here). No further fetal testing was done due to insignificant clinical nature of these hemoglobinopathies. This case brings out a rare compound heterozygous encountered in routine screening and further

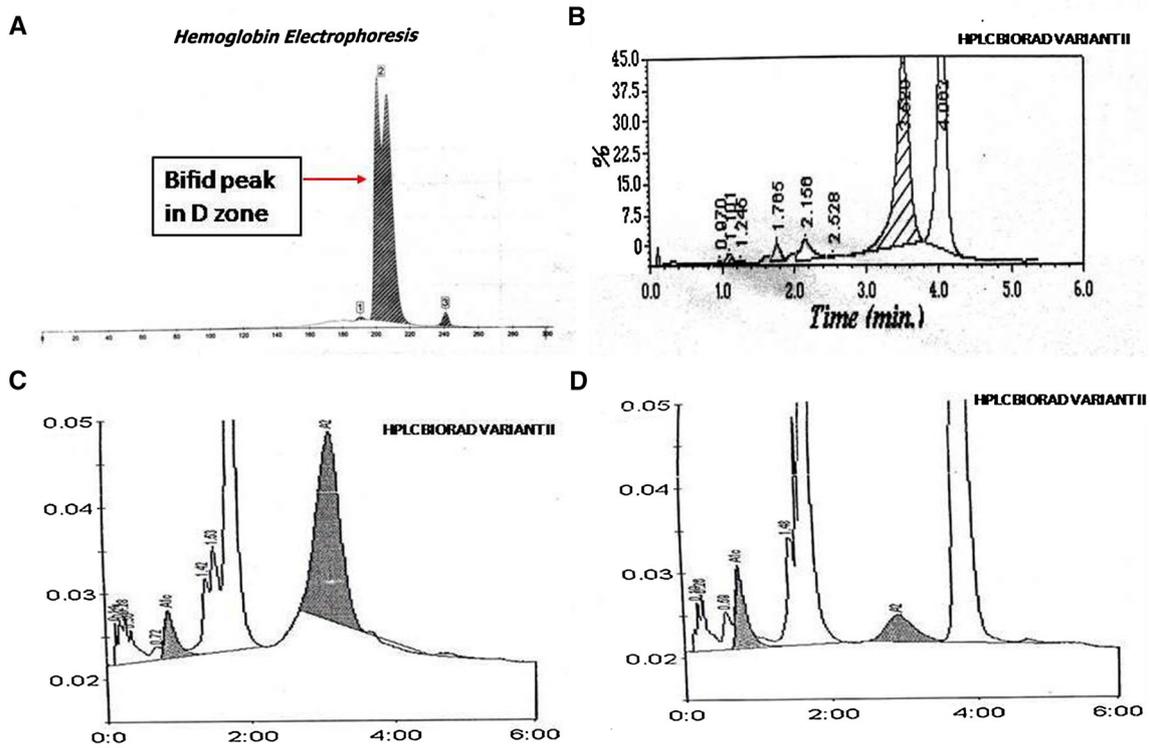
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**Fig. 1** Hb capillary zone electrophoresis of patient showing bifid peak in D zone (a), patient’s HPLC showing 2 peaks—compound heterozygous of Hb D-Iran and Hb D-Punjab (b), fathers HPLC

suggestive of heterozygous Hb D-Iran (c) and mother’s HPLC suggestive of heterozygous Hb D-Punjab (d)

reiterates the significance of combining two modalities of diagnosis in defining hemoglobinopathies.

**Compliance with Ethical Standards**

**Conflict of interest** The authors declare no conflicts of interest.