

Congenital Ichthyosis and neurological manifestations, Sjogren Larsson and beyond: A study of seven children.

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INTRODUCTION

Objective: To describe the phenotypic spectrum of children with Ichthyosis manifesting with neurological manifestation.

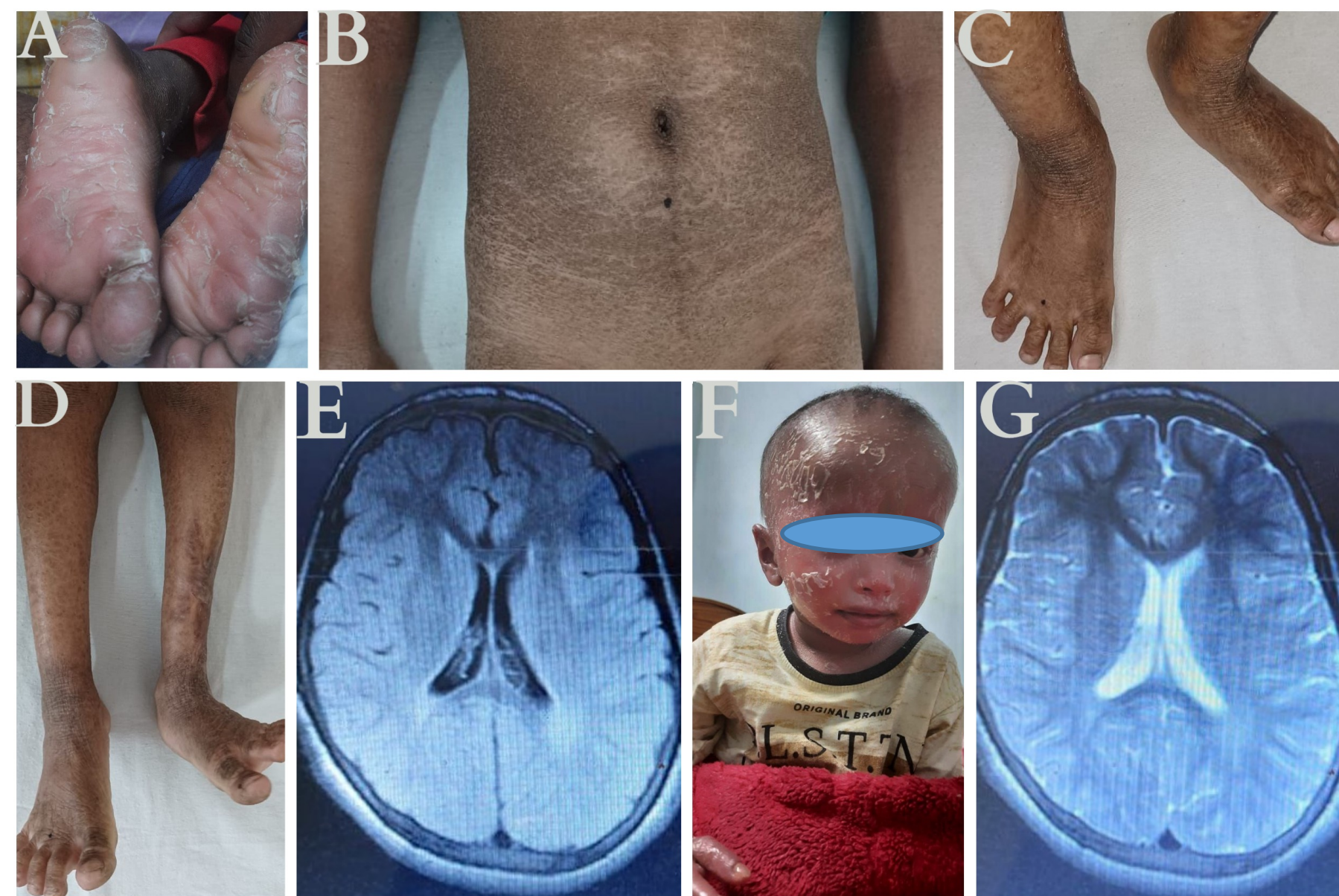
MATERIALS & METHODS:

- ✓ A retrospective review of all genetic testing performed at a single centre since Jan 2020 was performed.
- ✓ All children with Ichthyosis manifesting with neurological manifestations were considered eligible.
- ✓ Patient data, including details of clinical, laboratory, neuroimaging features, and therapeutic interventions

RESULTS

- ✓ Seven patients belonging to seven families were included.
- ✓ Irrespective of the genotype, all patients exhibited ichthyosis
- ✓ Neurological examination long tract signs with spastic diplegia phenotype, collidon baby in neonatal period (n=1 /7) .
- ✓ Other features included motor predominant developmental delay (n= 6/7) and none had movement disorders /cerebellar features.
- ✓ Intellectual disability was noted in all SLS and none in rest .
- ✓ All children were ambulatory except one with SLS.
- ✓ Four children had epilepsy on single drug and generalised (n=1/4) ,Multifocal (n=3/4) Spikewave discharges on EEG.

- ✓ Brain MRI white matter abnormalities in (n=5/7) patients
- ✓ Isotretinoin was exhibited (n=1/7) apart from routine emollients and environmental changes as therapy for ichthyosis.



DISCUSSION

- ✓ Among Neurocutaneous diseases, there is a distinctive coexistence of neurologic symptoms and ichthyosis which is seen in a subgroup of genetic diseases referred to as the neuro-ichthyoses.
- ✓ Sjögren-Larsson's syndrome (SLS) is the most widely recognized form of neuro-ichthyosis
- ✓ We describe Neuroichthyosis beyond SLS.
- ✓ It was observed that although affected patients shared the cutaneous feature of ichthyosis, there was variability in the nature and severity of neurologic disease.
- ✓ Impaired cognition, spasticity, developmental delay, sensorineural deafness, visual impairment, and/or seizures are the primary neurologic findings

CASE DESCRIPTION TABLE

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7
Age/ Gender	5 yrs/ M	4 yrs/ M	7 yrs/ M	13 yrs/ M	6 yrs/ M	8 yrs/ M	8 yrs/ F
Collodion Neonate	No	Yes	No	No	No	No	No
Long Tract Signs	+	+	+	+	+	+	+
GDD (Motor Predom)	+	+	+	+	+	+	-
Isolated Motor	-	-	-	-	-	-	+
Intellectual Disability	-	-	-	+	+	+	-
Ambulatory	Yes	Yes	Yes	No	No	Yes	Yes
Epilepsy	Yes	-	-	Yes	Yes	Yes	-
EEG	Gen SpW	-	-	MFE	MFE	-	-
MRI							
White matter abnormality	+	-	+	+	+	+	-
Normal	-	+	-	-	-	-	+
Isotretinoin	-	+	-	-	-	-	-
Genetic :Whole exome sequencing	SERPINB7 AR Heterozygous	NIPAL4 AR Homozygous	LORICRIN AD Heterozygous	ALDH3A2 AR Homozygous	ALDH3A2 AR Homozygous	ALDH3A2 AR Homozygous	ERBJ homozygous VOUS
Consanguinity	3	3	-	3	-	3	3

CONCLUSIONS

- ✓ The study describes the children presenting with ichthyosis and neurological manifestations has myriad genetic underpinning well beyond the commonly described Sjogren Larsson syndrome.
- ✓ White matter hyperintensities was the commonest Neuroimaging feature (n=5/7) with spastic diplegia phenotype in all except NIPAL4 & child with non-contributory Exome.

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