The Egyptian Journal of Medical Human Genetics (2014) 15, 87–90

Ain Shams University

The Egyptian Journal of Medical Human Genetics

www.ejmhg.eg.net
www.sciencedirect.com

CASE REPORT

# Intrafamilial variability in Simpson–Golabi–Behmel syndrome with bilateral posterior ear lobule creases

**Rabah M. Shawky *, Heba Salah Abd-Elkhalek, Shimaa Gad**

*Pediatric Department, Genetics Unit, Ain Shams University, Cairo, Egypt*

Received 1 August 2013; accepted 12 August 2013
Available online 8 September 2013

**KEYWORDS**

Simpson–Golabi–Behmel syndrome;
Over growth syndromes;
Glypican (GPC) 3;
Polydactyly;
Macroglossia;
Accessory nipples

**Abstract** We report a family having two male sibs with Simpson–Golabi–Behmel syndrome (SGBS). Both have many typical features of the syndrome. These features included macrocephaly, macroglossia, post axial polydactyl of the left hand, bilateral low insertion of the thumb, multiple accessory nipples, hepatomegaly, and congenital heart. The patients have bilateral anterior helical ear pits, and characteristic posterior ear lobule creases. The older one has severe mental retardation and died at the age of 13 months with bronchopneumonia, and the younger one is 7 months old with normal mentality. The mother looks broad, stocky, and tall.



## 1. Introduction

Simpson–Golabi–Behmel syndrome (SGBS) is a rare inherited X-linked recessive multiple congenital abnormality/intellectual disability syndrome characterized by pre- and post-natal overgrowth, distinctive craniofacial features, macrocephaly, variable congenital malformations including supernumerary nipples, organomegaly, increased risk of tumor and mild/moderate intellectual deficiency [1].

There is great variability in severity of this syndrome, and mutations in the gene encoding glypican (GPC) 3 appear to be responsible for most type 1 cases of Simpson–Golabi–Behmel syndrome . Duplication of the GPC4 gene has also been associated with this syndrome; however, no duplications involving GPC3 have been related. The absence of a functional GPC3 may alter the normal differentiation of embryonal mesodermal tissues predisposing to the development of embryonal tumors [2].

Here we present a family having 2 sibs with many of the typical features of the SGBS with some unusual features.

## 2. Case report

Our case was a 7 month old male infant, forth in order of birth of one and half consanguineous Egyptian parents. The patient was delivered at 38 weeks of gestation and he was 3.4 kg weight at birth (at 75th percentile) after cesarean section delivery. No problems were noted during pregnancy.

The patient was referred to the Genetics Clinics, Pediatric Hospital, Ain Shams University for abnormal features. He has a broad stocky appearance, he can sit with support, and can recognize his mother (normal mentality). His weight is 10.4 kg (>97th percentile), length 73 cm (75th percentile), skull circumference 46.2 cm (95th percentile), with open anterior fontanel measuring 4 × 4 cm.

* Corresponding author. Tel.: +20 2 22585577.
E-mail address: shawkyrabah@yahoo.com (R.M. Shawky).
Peer review under responsibility of Ain Shams University.

Production and hosting by Elsevier

1110-8630 © 2014 Production and hosting by Elsevier B.V. on behalf of Ain Shams University.
http://dx.doi.org/10.1016/j.ejmhg.2013.08.001

The patient has macrocephaly with prominent hairy forehead, thick eyebrows, hypertelorism, broad nasal root with short nose, upterned nares, low set ears with bilateral helical ear pits on the front and characteristic ear lobule creases on the back. The mouth is large with thin upper and thick everted lower lip, unerupted teeth, and macroglosia (Figs. 1–3). The neck is short.

Both hands are large with low insertion of the thumb. The left hand shows postaxial polydactyly with clinodactly and partial cutaneous syndactyly of the 5th, and 6th fingers. In both hands the nail of the index finger is dysplastic, and partially embedded in terminal phalynx (Figs. 4 and 5).

There are bilateral supernumerary nipples on the anterior chest wall (Fig. 6). The abdominal wall shows diastasis recti. Cardiac examination detected harsh left parasternal pansystolic murmur propagated all over the heart. The liver is enlarged 4 cm below costal margin at the mid clavicular line. Chest, neurological, and genital examinations are normal. Vision and hearing are also normal.

ECHO cardiography detected perimembranous ventricular septal defect (VSD) measuring 0.42 cm. Abdominal ultrasonography detected hepatomegaly. Karyotype revealed 46, XY normal male karyotype. X-ray spine and ribs were normal.

The older brother of the patient suffered delayed motor and mental development. He was macrosomic, with same facial features together with pectus excavatum, ventricular septal defect and dysplastic embedded nails of both index fingers. He suffered from recurrent chest infection and died at the age of 13 months with bronchopneumonia.

The mother looks broad, stocky, and tall (2SD above the mean for age and sex) with no dysmorphic features.

## 3. Discussion

Patients with Simpson–Golabi–Behmel syndrome (SGBS, MIM: 312870) were first described by Simpson et al. in 1975 [3]. It is an X-linked syndrome characterized by pre- and postnatal overgrowth (gigantism), which clinically resembles the autosomal Beckwith–Wiedemann syndrome (BWS) [4].

SGBS is characterized by developmental delay, macrocephaly, abnormal facial appearance with prominent eyes, macroglossia, macrosomia, renal and skeletal abnormalities, supernumerary nipples, congenital heart defects, diaphragmatic hernia, polydactyly, rib malformations, hypoplasia of index finger and of the same fingernail, 2nd–3rd finger syndactyly, increased risk of neonatal death and of embryonal cancers during early childhood [5–7].


**Figure 1** Facial features including hairy forehead, transverse slanting of palpebral fissures, broad nasal root, and low set ears.

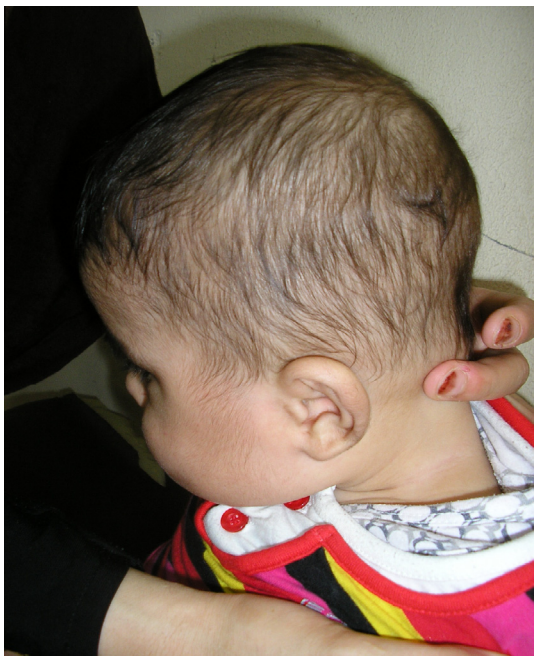

**Figure 2** Short neck, and low set ears.

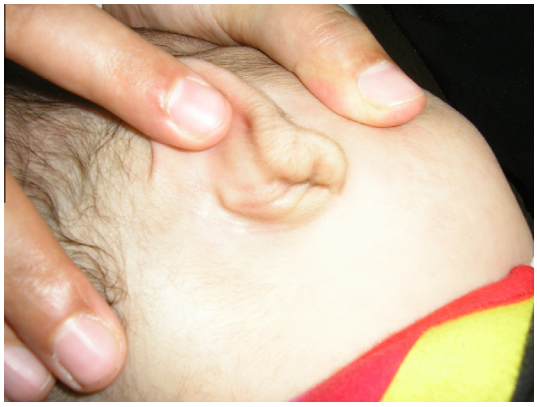

**Figure 3** Longitudinal and transverse creases over the back surface of the ear lobule.

We present a family having two male sibs with SGBS. The young one, 7 months old has pre, and postnatal overgrowth, short nose with broad bridge, large mouth with enlarged tongue, and thick lower lip, mild hypertelorism, large ears with pits on the front and characteristic creases on back of the ear lobules (not reported before), short neck, supernumerary nipples, VSD, hepatomegaly, diastasis recti, dysplastic embedded nails of both index fingers with unilateral postaxial polysyndactyly in the left hand. The mentality is normal and there are no hypoglycemic attacks, sleeping or feeding difficulties.

The older sib of our patient had the same facial features with macrosomia, VSD, dysplastic embedded nails of both index fingers with polydactyly. However the mentality was