

P1-66 46,XX ovotesticular DSD in the absence of SRY gene associated to SOX3 duplication



Romina P. Grinspon*, Julian Nevado**, María de los Angeles Mori Alvarez**, Rodolfo A. Rey*, Graciela del Rey*, Ana Chiesa*

*Centro de Investigaciones Endocrinológicas "Dr. César Bergadá" (CEDIE), CONICET-FEI-División de Endocrinología, Hospital de Niños R. Gutiérrez, Buenos Aires - Argentina.
 **Área de Genómica Estructural y Funcional INGEMM -Instituto de Genética Médica y Molecular/Hospital Universitario La Paz. IdiPAZ- Instituto de Investigación Sanitaria del Hospital Universitario La Paz, Universidad Autónoma de Madrid, Spain.

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Background

Ovotesticular DSD is a rare disorder defined by the presence of both ovarian and testicular tissue in the same individual.

SRY is present in approximately 1/3 of patients with 46,XX ovotesticular DSD. In SRY-negative ovotesticular DSD, the mechanism responsible for the presence of testicular tissue is not yet understood.

Case presentation

Male patient referred for hypospadias and bilateral cryptorchidism at 2.5 years of age.

He had a trophic phallus (32 mm x 13 mm) with coronal hypospadias and hypoplastic scrotum. No palpable gonads.

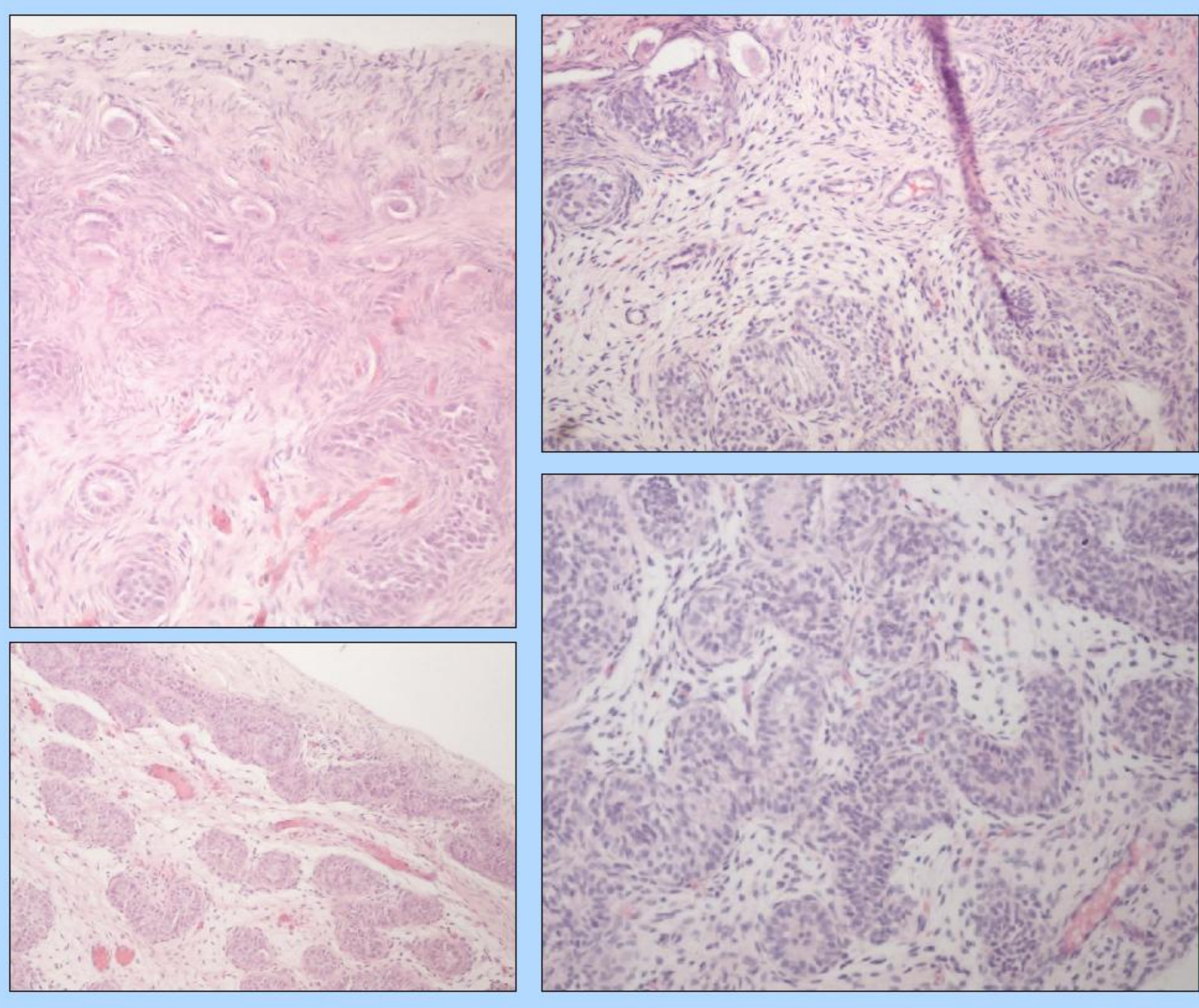


Results

Hormonal laboratory	Patient	Normal values (range)
LH (IU/litre)	<0.01	0.05-0.3
FSH (IU/litre)	0.73	0.2-0.9
Testosterone (ng/dl), Basal	<10	10-32
Post hCG	30	>150
AMH (pmol/litre)	216	300-1400

Karyotype 46,XX (60)

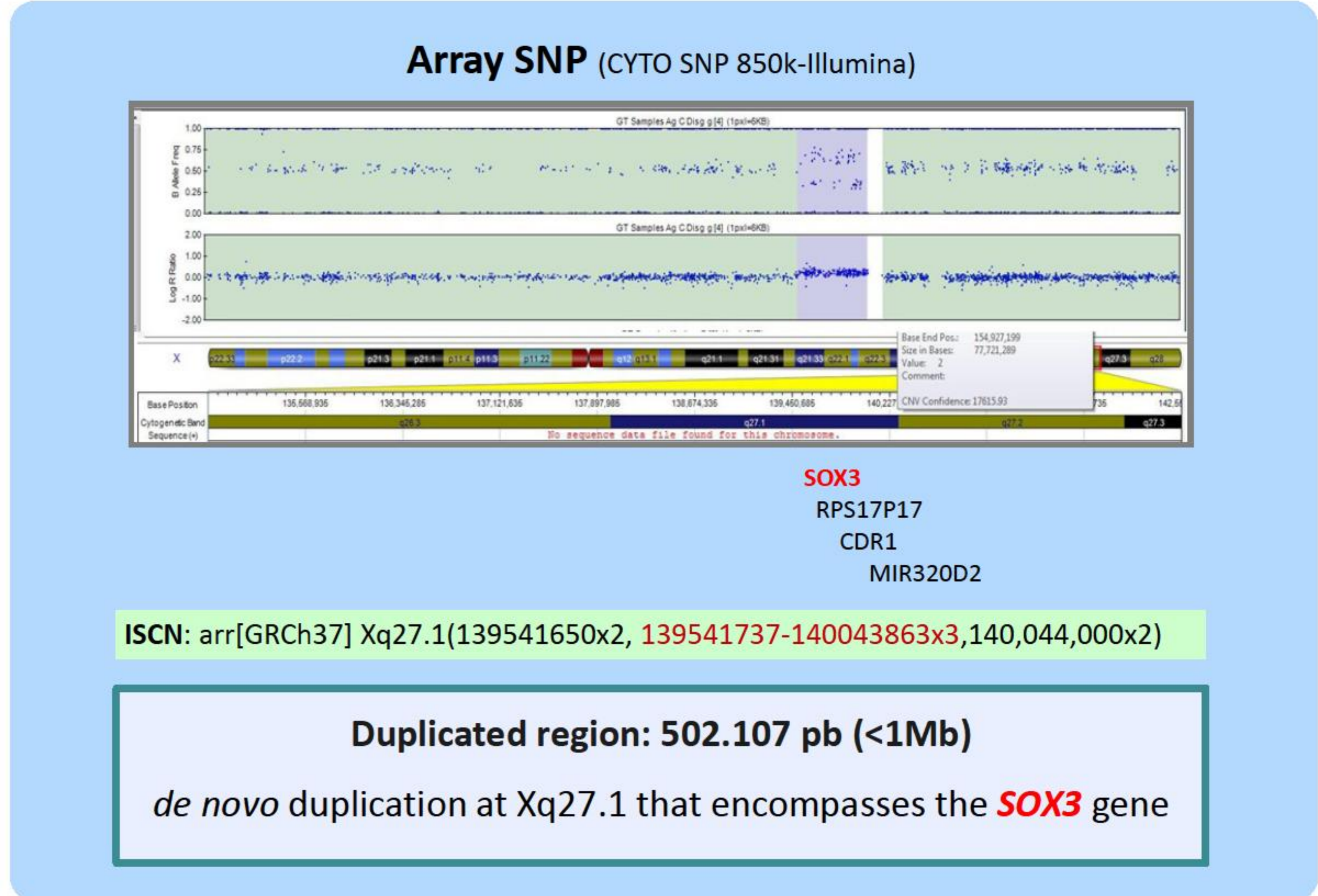
BILATERAL OVOTESTES



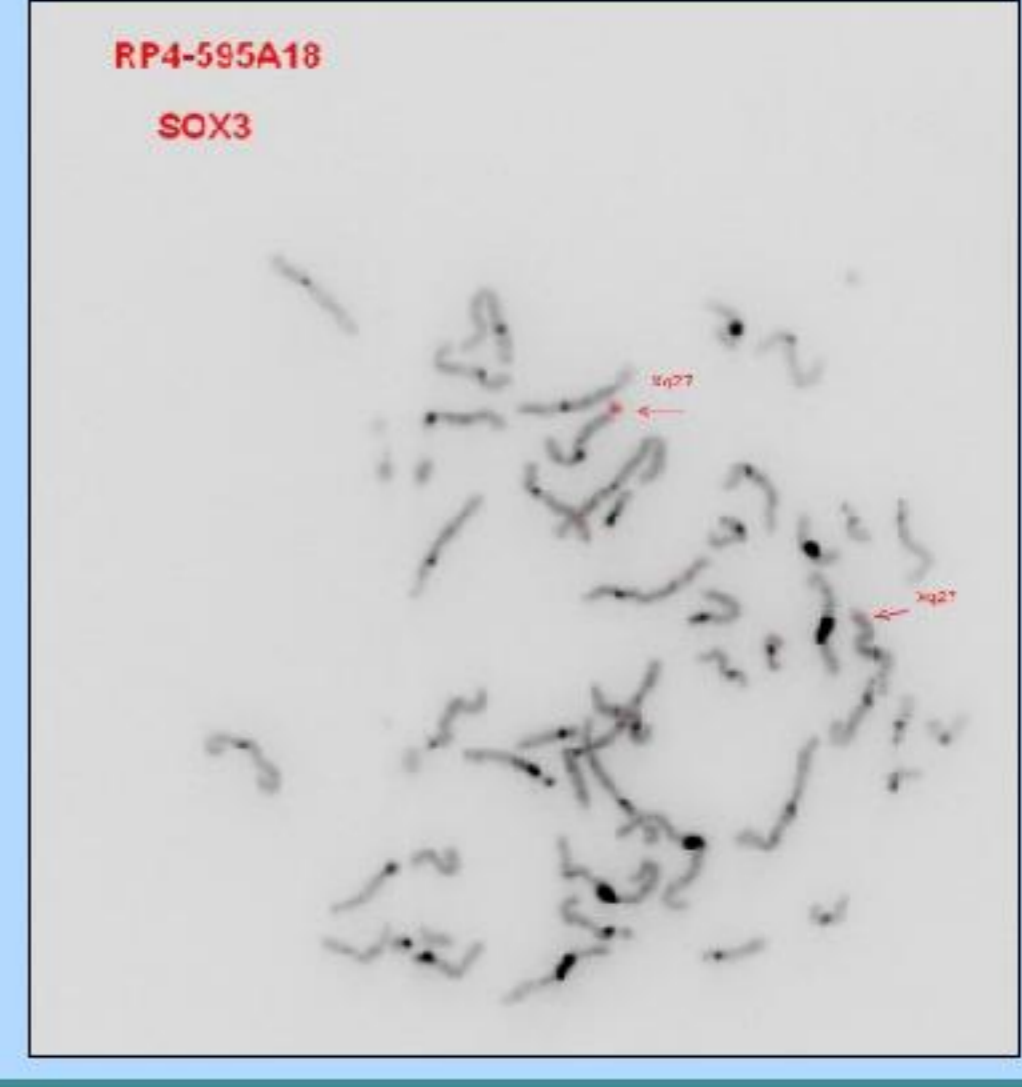
Left gonadectomy

Right biopsy

QF PCR (Devyser Kit) } SRY negative
 Array SNP (CYTO SNP 850k-Illumina) } No Y sequences

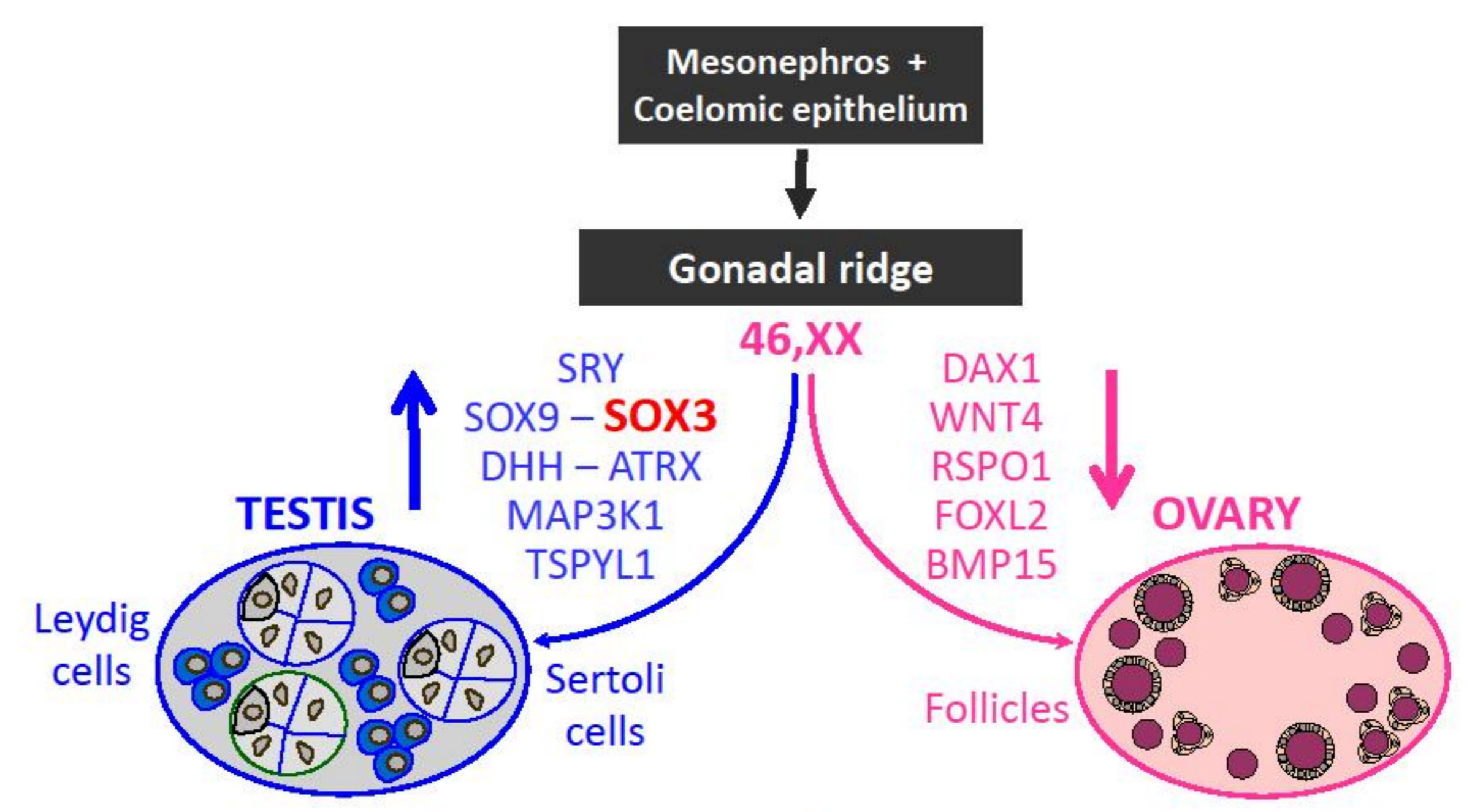
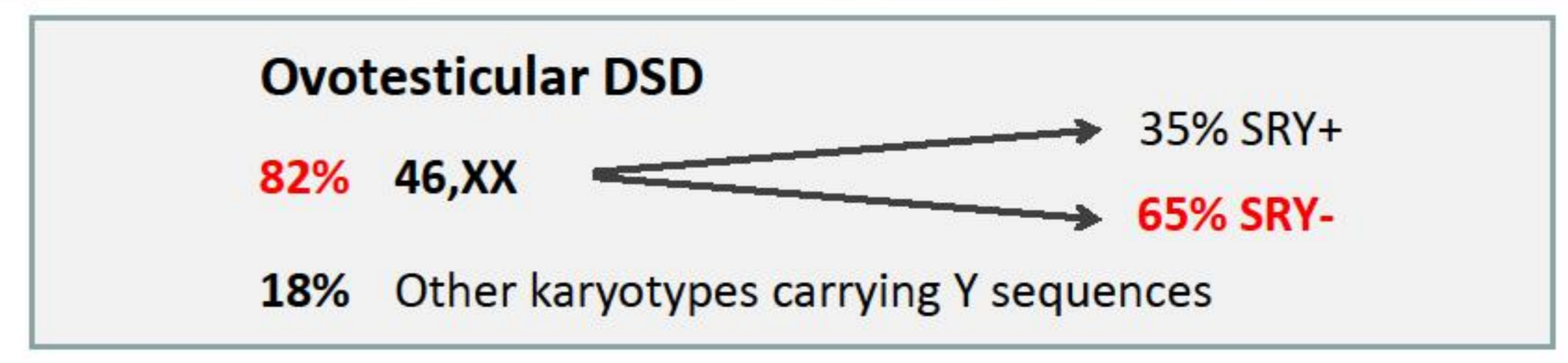


Metaphase FISH analysis using a BAC probe



Tandem duplication of SOX3 on the X chromosome

Discussion



Two possible mechanisms involved in the differentiation of an XX gonad into a testis : increased expression of pro-testicular genes or insufficient expression of pro-ovarian genes.

Conclusion

This is the first case of SRY-negative 46,XX Ovotesticular DSD in whom a SOX3 duplication is reported.

These results are in line with evidence in mice indicating that, in the absence of SRY, gain-of-function of SOX3 induces testis differentiation in the XX bipotential gonad.