

14/12/2020

Dr. Rajesh Verma, Assistant professor and Head, U.G. Department of zoology, S.K. College, Dumraon, (Buxar) Notes for B.Sc part 2nd., topic : (V) A.

Question :- Gonads ko classify karke hue sachitko varnan kare ?

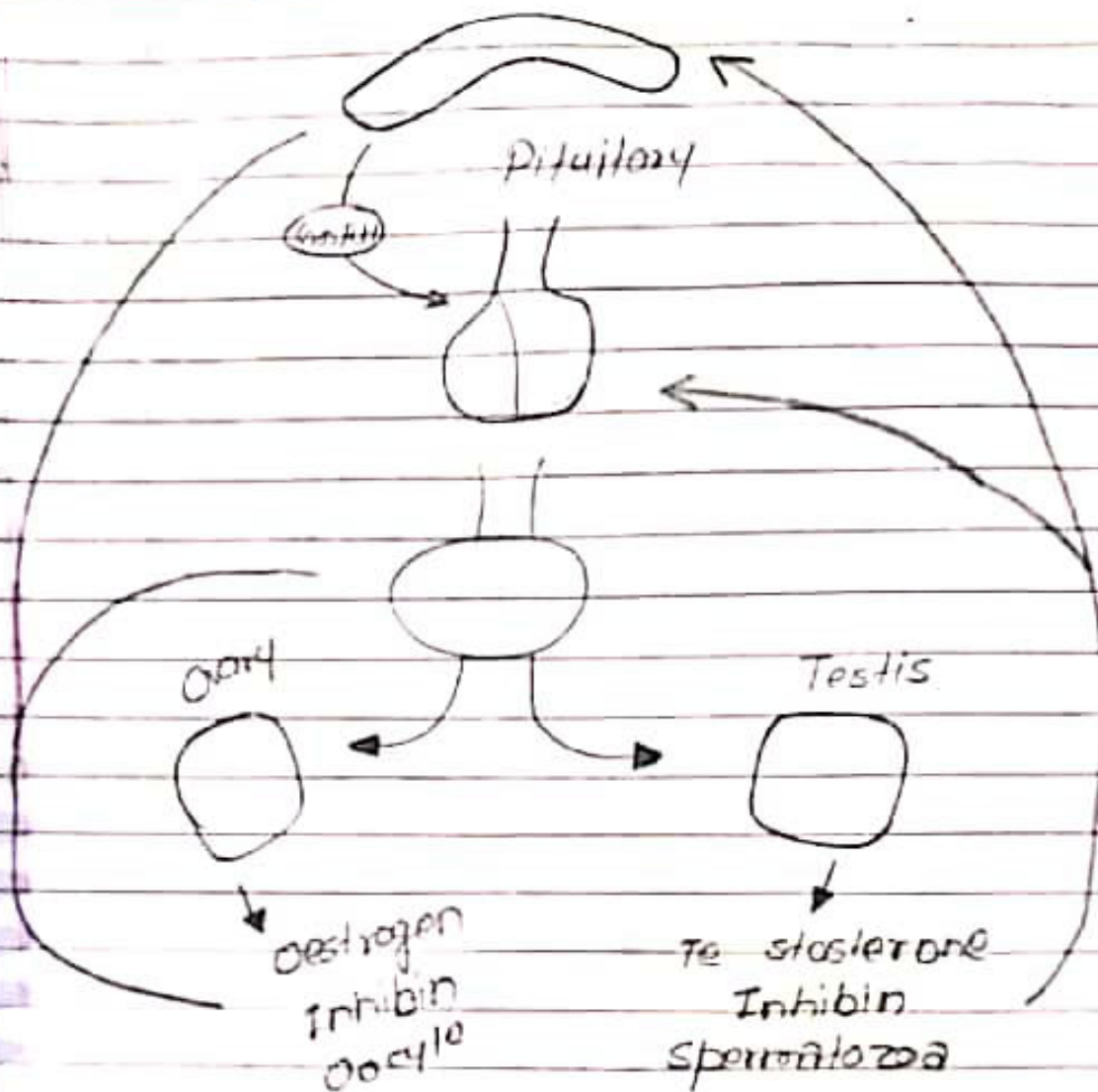
Answer :- Gonaadal dysgenesis is classified as any congenital developmental disorder of the reproductive system in the male or female. It is the defective development of the gonads in an embryo, with reproductive tissue replaced with functionless, fibrous tissue, termed streak gonads. Streak gonads are a form of aplasia, resulting in hormonal failure that manifests as sexual infantilism and infertility, with no initiation of puberty and secondary sex characteristics.

Gonaadal development is a genetically controlled process by the chromosomal sex

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The hypothalamic-pituitary-gonadal axis with key hormones.

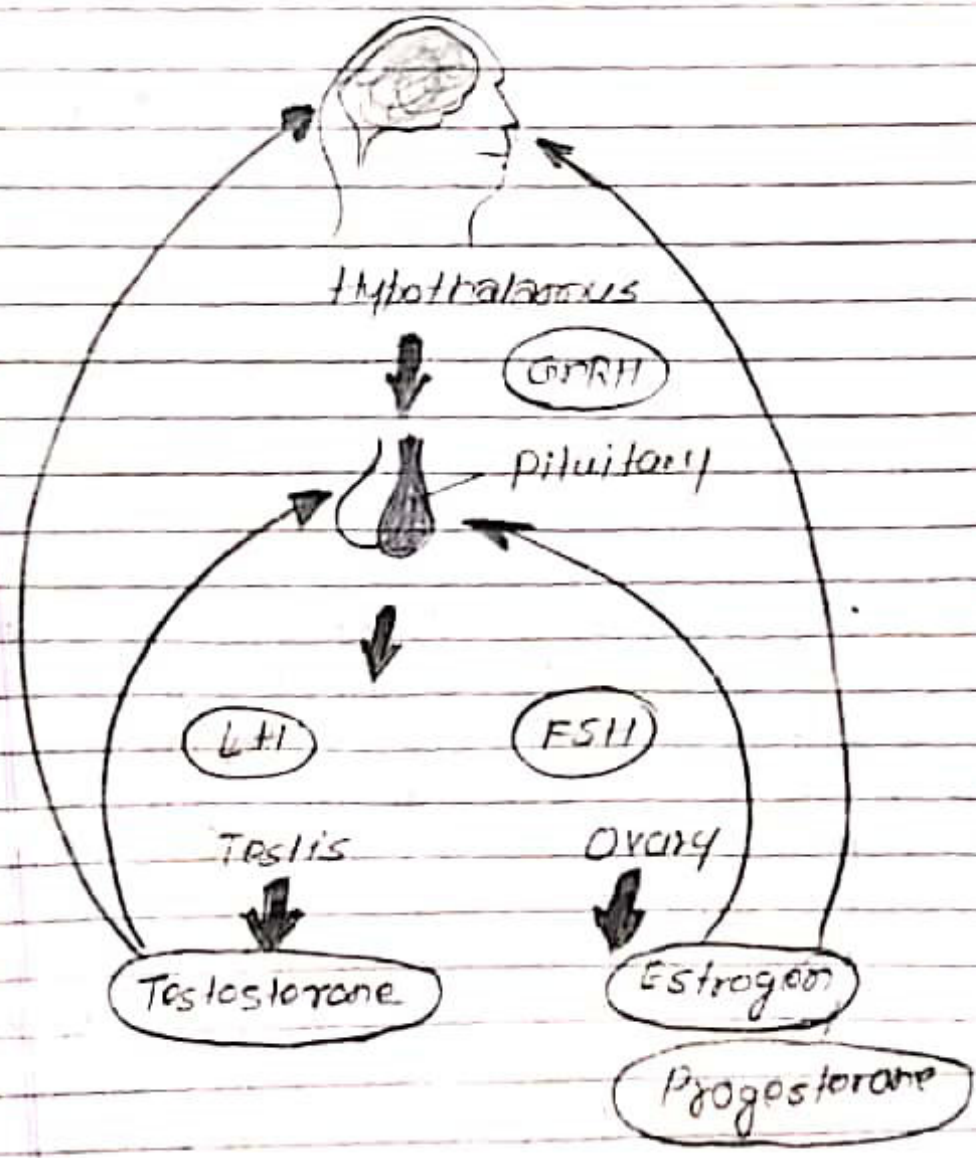
(XX or XY) which directs the formation of the gonad (ovary or testis).

Differentiation of the gonads requires a highly regulated cascade of genetic, molecular and epigenetic events.

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Gonadal dysgenesis arises from the failure of sex signalling in the tightly regulated process during early foetal development.

Manifestation of gonadal dysgenesis is dependent on the aetiology and severity of the underlying defect.



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Mixed Gonadal Dysgenesis :-

also known as mixed gonads dysgenesis, or partial gonadal dysgenesis is a sex development disorder associated with sex chromosome aneuploidy and mosaicism of the Y chromosome. Mixed gonadal dysgenesis is the presence of two or more germ line cells.

the degree of development of the male reproductive tract is determined by the ratio of germ line cells expressing the XY genotype.

Manifestations of mixed gonadal dysgenesis are highly variable with asymmetry in gonadal development of testis and streak gonad. The percentage of cells expressing the XY genotype. The dysgenetic testis can have adequate functional tissue levels of testosterone to cause masculinisation.

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Mixed gonadal dysgenesis is poorly understood at the molecular level. The loss of the Y chromosome can occur from deletions, translocations, or migration failure of paired chromosomes during cell division. The chromosomal loss results in partial expression of the SRY gene, giving rise to abnormal development of the reproductive tract and altered hormone levels.

Turner syndrome :-

Turner syndrome, also known as 45,X or 45,X0, is a chromosomal abnormality characterised by a partial or completely missing second X chromosome giving a chromosomal count of 45, instead of the correct count of 46 chromosomes.