Females with a 47,XXX karyotype were first described by Jacobs et al. in 1959. The incidence of 47,XXX among female newborns is approximately 1 in 1000 live births.

GENETICS/BASIC DEFECTS
1. Etiology: an extra chromosome X is responsible for 47,XXX
2. Mechanism of the origin for the 47,XXX condition
   a. Almost all 47,XXX result from maternal nondisjunction
   b. Typically at meiosis I

CLINICAL FEATURES
1. No specific phenotype exists in 47,XXX females
2. A higher incidence of minor anomalies
   a. Epicanthal folds
   b. Upslanting palpebral fissures
   c. Ear abnormalities
   d. Clinodactyly
3. Growth and development
   a. Birth weights tend to be slightly lower than the general population.
   b. Taller in older children
   c. Relative microcephaly
   d. At risk for mild speech/language and motor delays and learning disabilities
   e. Intelligence
      i. Normal range
      ii. Lower intelligence quotients (10–15 points) in comparison to unaffected sibs
4. Gonadal structures and function
   a. Heterosexual
   b. Normal secondary sexual characteristics
   c. Normal menstruation
   d. Fertility usually normal
   e. Late menarche
   f. Occasional amenorrhea
   g. Premature ovarian failure
   h. Sterility with streak gonads
5. Congenital anomalies reported in a very small number of patients
   a. Urogenital tract abnormalities
   b. Brain abnormalities
   c. Skeletal abnormalities
   d. Congenital heart defects
   e. Craniofacial abnormalities
6. Adaptation status: variable
   a. At risk for intellectual and psychological problems
   b. 47,XXX women during adolescence and young adulthood
      i. Less well adapted
      ii. With more stress
      iii. With work, leisure, and relationship problems
      iv. With a lower IQ
      v. With more psychopathology when contrasted with the comparison group
   c. Most 47,XXX women
      i. Self sufficient
      ii. Functioning reasonably well

DIAGNOSTIC INVESTIGATIONS
1. Chromosome analysis
2. Psychological and psychiatric evaluation when needed

GENETIC COUNSELING
1. Recurrence risk
   a. Patient’s sib: not increased
   b. Patient’s offspring
      i. An increased risk of a cytogenetically abnormal child but the extent of the risk cannot yet be determined
      ii. Majority of offspring normal
2. Prenatal diagnosis by fetal karyotyping from amniocytes or CVS
3. Management
   a. Infancy/toddler: assess milestones
   b. Childhood
      i. Assess school performance
      ii. Provide intervention if needed
         a) Speech/language therapy
         b) Physical/occupational therapy
         c) Educational remediation
   c. Adolescence: usually no intervention needed
   d. Adult adulthood: annual physical examination

REFERENCES
Fig. 1. A girl with 47,XXX at different ages showing normal phenotype.

Fig. 2. A girl with 47,XXX showing normal phenotype.

Fig. 3. 47,XXX karyotype.