Although most Leydig cell tumors are benign, radical orchiectomy is currently considered the standard therapy. We retrospectively analyzed the long-term follow-up of a series of patients with Leydig cell tumors electively treated with testis-sparing surgery. Between 1990 and 2005, 17 consecutive patients with Leydig cell tumors have been treated with testis-sparing surgery on an elective basis. Preoperative evaluation included physical examination, serum markers for germ cell tumors, scrotal ultrasound, abdomen computed tomography, chest X-ray and hormonal profile if clinically required. Testis-sparing surgery has been performed via an inguinal approach by spermatic cord clamping. Frozen section examination has been performed in all cases, revealing Leydig cell tumors. Follow-up consisted in physical examination, scrotal ultrasound, abdomen computerized tomography and chest X-ray every 6 months for the first 2 years, then annually. Tumor recurrence and survival have been evaluated. Mean patient age was 41.6 years (range 28-55). Medical referral has been prompted by symptoms/signs, such as infertility, gynecomastia or self-palpation of scrotal mass in 11 patients (64.7%), while in the remaining 6 (35.3%), lesions have been incidentally diagnosed. Hormonal profile has been performed in 9 patients, showing abnormalities in all. Mean tumor diameter was 13.4 mm (range 5-31). Definitive pathological examination confirmed benign Leydig cell tumor in all cases. After a mean follow-up of 91 months (range 12-192), neither local recurrence nor distant metastases have been detected and all patients are alive without evidence of disease. In patients with Leydig cell tumors testis-sparing surgery with frozen section examination provides an excellent long-term oncological outcome.