Case Report

Bilateral Gonadal Cysts and Late Diagnosis of Androgen Insensitivity Syndrome Treated by Laparoscopic Gonadectomy

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1. Introduction

Complete androgen insensitivity syndrome is a type of male pseudohermaphroditism in genotypically XY and phenotypically female patients, in which there is a defect that prevents normal androgen receptor function. Due to the presence of the anti-Müllerian hormone, the internal genital female organs are absent, and testes rather than ovaries are present [1]. Patients with the formerly called testicular feminization syndrome present to the gynecologist usually due to adnexal masses or primary amenorrhea.

The incidence of neoplastic formation is 52%, half of which are malignant, and usually occurs after puberty [2]. The risk of developing malignancy increases with age, reaching 33% at the age of 50 [3]. In order to prevent malignant transformation, both gonads should be removed after puberty. During the last years laparoscopic gonadectomy has become the method of choice but in case of cysts it should be performed with caution in order to remove them intact and prevent eventual tumor cell dissemination.

We report a case of bilateral cyst removal in a 48-year-old woman, followed by gonadectomy, both performed laparoscopically.

2. Case Report

A 48-year-old woman, presented to us complaining of lower abdominal pain. At the age of 16 she had been visited by a gynecologist due to primary amenorrhea, and uterus agenesis was diagnosed by ultrasound. No further examinations were made at the time. The patient, married for 13 years, had normal female external genitalia, mature secondary sexual characteristics, Tanner stage II breast development with pale areolae, and scanty pubic and axillary hair. In the gynecological examination, vulva and perineum appeared normal, but no cervix was visible and the proximal part of the vagina ended blindly. During bimanual examination, a 5 cm large cystic mass was palpated at the left adnexal region and a small right adnexa was palpated in the proximity of the internal inguinal canal opening. Ultrasound confirmed the absence of the uterus and revealed a 5 cm cystic mass on the left and another smaller cystic mass of 3 cm at the right adnexa. No signs of malignancy were observed.

Laparoscopy was performed to remove the cysts using a 3-port technique, and they were sent to the pathologist. Particular attention was paid to remove the cysts in the endobag to prevent eventual tumor cell dissemination. The histology revealed immature testicular tissue (inactive, as prepubertal)
and Leydig-cell hyperplasia in the 5 cm large cyst, and a se-
rous cyst with on it part of a small ductus deferens, with no
apparent testicular structures, at the right adnexal speci-
men.

After that, tumor markers and hormonal evaluation, and
also cytogenetic analysis, were performed. CA-125, CEA, a-
FP, and β-HCG were all found within normal limits. Serum
testosterone levels were 44.77 nmol/L, elevated and similar to
normal male values, gonadotropins were found within nor-
mal values (FSH : 11.6 U/L, LH : 13.8 U/L), LH/FSH quotient
1.2, SHBG : 80.0 nmol/L and TSH on serum 0.527 mE/L,
also within normal values. Chromosomal analysis was made
on lymphocyte cultures from peripheral blood and revealed
XY karyotype.

Intravenous urography excluded renal anomalies. The
definitive diagnosis of androgen insensitivity syndrome was
made and the patient was programmed for laparoscopic
gonadectomy. The pedicles of the 2 adnexa, which were sit-
uated at the internal inguinal opening (Figures 1(a) and 1(b)),
were first coagulated with bipolar diathermy, then cut with
scissors, and finally ligated with a Roeder loop on each side
(Figures 1(c) and 1(d)). As on the previous operation, due
to the age of the patient and the statistically high malignant
incidence, an endobag was used to remove the gonads after
extending the right port. No complications occurred during
the operation which lasted 30 minutes.

The histopathologic report revealed the presence of
testicles on both sides, marked by Leydig-cell hyperplasia,
and on the left side presence of small sites of ovarian stroma.

Considering the age of the patient, followup was pro-
grammed and hormonal replacement therapy was given, and
particular importance was attributed to the way of informing
the patient. Due to the fact that she was married and evalu-
ating the psychological effects that would provoke knowing
that she is genotypically a man, we decided to inform the
patient that she had some kind of gonadal dysgenesis and
that the gonads would be removed for the high degeneration
risks, deliberately omitting to inform her about the kary-
otype results.

3. Discussion

Androgen insensitivity syndrome is the most common cause
of male pseudohermaphroditism, responsible for 10% of the
cases of primary amenorrhea [4]. Defects in the androgen re-
ceptor gene located on the X chromosome include absence of
the gene that encodes for the androgen receptor and abnor-
malities in the binding domains of the receptor [1].

The major concern in these patients is the development
of a neoplasia, most often a gonadoblastoma or a malignant
dysgerminoma. Prophylactic gonadectomy is advised in the
postpubertal period.

Laparoscopic gonadectomy offers the minimum psycho-
logical trauma which is of major importance in these women,
for the rapid recovery and short hospital stay. It is a safe and
simple procedure and is easily performed using bipolar co-
agulation forceps, Roeder loops and endobags, as long as the
surgeon is cautious while removing the gonads or eventual
cysts, to avoid tumor cell contamination, even more in pa-
ients of a certain age, as the one we present, where the malig-
nancy incidence is much higher.

Figure 1: Laparoscopy pictures. (a) Left adnexa. (b) Right adnexa. (c) Left side after gonadal removal. (d) Right side after gonadal removal.
Hormonal replacement therapy was recommended, due to its protective effects [5]. In adolescent patients Slijper et al. advised step by step informing the patient of the diagnosis [6]. In cases as the present one, we advise to omit the karyotype analysis results, because the psychological impact would be enormous.

We presented a rare case of bilateral cysts in a mature patient with complete androgen receptor insensitivity. Laparoscopic gonadectomy is effective and the importance of removing the cysts and later on the gonads intact is stressed.

References