

STUDY OF 60 ORCHIDECTOMIES AT RURAL TERTIARY CARE CENTRE OF MAHARASHTRA.

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Abstract:

Introduction:

Castration and orchidectomy have been practiced for over 2000 years; references to castration and orchidectomy may be found in Biblical and legendary sources. Orchidectomy has been used to treat male aggressiveness for many years. Surgeons began to examine its therapeutic uses around the beginning of the twentieth century. More knowledge about the role of the testicles in regulating prostatic development and growth became available. Orchidectomy can be performed as an emergency or as a non-emergency operation.

Objective: To study the various causes leading to orchidectomy and other factors like age, laterality of disease, operative procedure, and post-operative management at a rural tertiary care centre.

Methodology: In our study, we retrospectively examined the records of patients who underwent orchidectomy for various conditions during the span of January 2018 to March 2021.

Results: In our case series, out of the 60 cases, 35 cases (58%) were done for malignant conditions, and 25 cases (42%) were done for benign conditions. The maximum number of orchidectomies were done for carcinoma prostate in malignant cases followed by carcinoma testis, whereas testicular torsion was the leading benign cause followed by testicular abscess, inguinal hernia, Fournier's gangrene, scrotal trauma, and undescended testis. Right-sided orchidectomy was done in 15 cases, left-sided in 17 cases whereas bilateral orchidectomies were done in 28 cases. Subcapsular orchidectomy had better patient satisfaction as compared to extracapsular or total orchidectomy.

Conclusion: In our case series, the majority of orchidectomies were done for malignant cases and involved bilateral orchidectomy.

Keywords: *Orchidectomy, Subcapsular orchidectomy, Carcinoma prostate.*

Introduction:

Castration and orchidectomy have been practiced for over 2000 years; references to castration and orchidectomy may be found in Biblical and legendary sources.¹ Orchidectomy has been used to treat male aggressiveness for many years. Surgeons began to examine its therapeutic uses around the beginning of the twentieth century as more knowledge about the role of the testicles in regulating prostatic development and growth became available. Orchidectomy can be performed as an emergency or as a non-emergency operation.

Material methods:

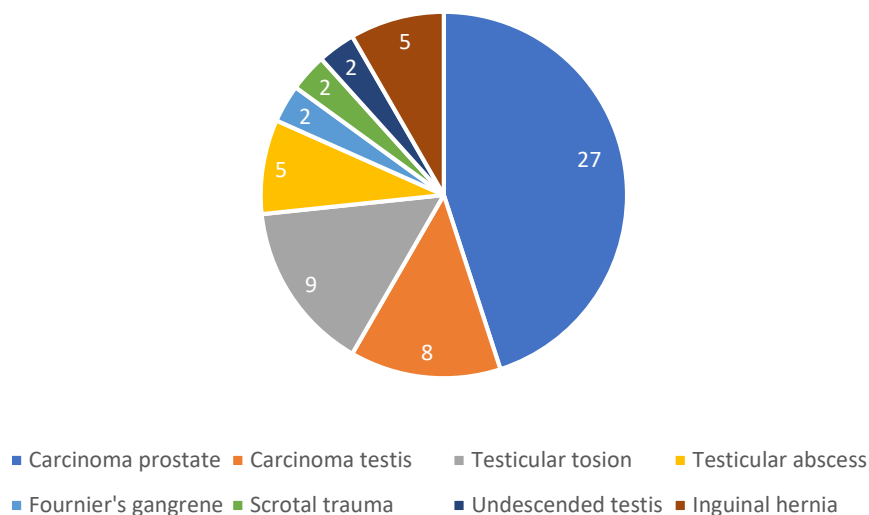
In our study, we retrospectively examined the records of patients who underwent orchidectomy for various conditions during the span of January 2018 to March 2021.

Results:

In our study we have included various indications, which had different age manifestations with most common being 60-85 years. The main causes for orchidectomy in 20-40 age group was testicular torsion (40.9%), testicular tumor (36.36%), and undescended testis (22.7%). Prostate cancer was the leading cause in the 60-80 years and older age group. In our study prostate cancer (45%), testicular torsion (15%), testicular tumor (13%), and undescended testis (8.33%) were the leading causes.

| Diagnosis | Cases | Percentage | Age group |
|---------------------|-------|------------|-----------|
| Ca prostate | 27 | 45% | 60-85 |
| Ca testis | 8 | 13% | 20-35 |
| Testicular Torsion | 9 | 15% | 20-30 |
| Testicular abscess | 5 | 8.33% | 40-60 |
| Fournier's gangrene | 2 | 3.33% | 40-60 |
| Scrotal trauma | 2 | 3.33% | 30-50 |
| Undescended testis | 2 | 3.33% | 30-40 |
| Inguinal hernia | 5 | 8.33% | 40-60 |

Total cases



In our case series, out of the 60 cases, 35 cases (58%) were done for malignant conditions and 25 cases (42%) were done for benign conditions. Right-sided orchidectomy was done in 15 cases, left-sided in 17 cases whereas bilateral orchidectomies were done in 28 cases. The maximum number of orchidectomies were done for carcinoma prostate in malignant cases followed by carcinoma testis, whereas testicular torsion was the leading benign cause followed by testicular abscess, inguinal hernia, Fournier's gangrene, scrotal trauma, and undescended testis. Subcapsular orchidectomy had better patient satisfaction as compared to extracapsular or total orchidectomy. Post operative period of patients undergoing orchidectomy for torsion testis, carcinoma prostate, carcinoma testis, undescended testis almost remained uneventful. Following removal of corrugated drain, patients used to be generally discharged by post op day 3. Complications such as seroma/pus collection, wound gape occur in view of overall generalized poor condition and poor built.

Discussion:

Surgical orchidectomy is a simple procedure involving removal of male genitalia with few physical side effects, low mortality, and cost effectiveness.^{2,3} Orchidectomy has a variation in presentation in terms of indications well as age group, which is clearly evident from our study. It can be performed as an elective surgery and also as an emergency surgery. Maximum number of orchidectomies were done for malignant condition, out of which carcinoma prostate was the leading cause. Median age at diagnosis of prostate cancer is 66 years. This can be noted in other studies done by Kah Poh Loh et al where the most common age group is the 6th decade.^{4,5}

In our study we have included various indications, which had different age manifestations.

The main causes for orchidectomy in 20-40 age group was testicular torsion (40.9%), testicular tumor (36.36%), and undescended testis (22.7%). Prostate cancer was the leading cause in the 60-80 years and older age group. In our study prostate cancer (45%), testicular torsion (15%), testicular tumor (13%), and undescended testis (8.33%) were the leading causes as seen in accordance with study done by Zhi Long et al- causes of orchidectomy – an analysis of 291 cases.^{6,7}

Testicular torsion leading to orchiectomy is based on the time of presentation. Early presentation can lead to salvageable testis, but often the case is of delayed presentation. Duration of symptoms >12 hours and higher age are risk factors. The affected side is explored and if non-viable orchiectomy is performed, also the opposite has to be examined and orchiopexy is to be done. This was a leading benign indication in our study involving 15% cases, also noted in studies of Seppo Taskinen et-al, Victoria J Sharp et-al.⁸



Fournier's gangrene is a surgical emergency with high mortality rate notable in low socioeconomic states, diabetics, alcoholics requiring debridement, along with at times colostomy and orchidectomy. In our study 2 cases had undergone orchiectomy due to the condition which was in accordance with Studies done by Kerem Taken et-al, Satta Salami et-al.^{9, 10}

Scrotal trauma is an emergency condition and emergency exploration is necessary to determine prognosis. In our study emergency orchiectomy for 2 cases was done as testis was found to be non-viable. Similar findings noted in study done by DM Dalton et-al Regarding management of blunt scrotal trauma.¹¹



Testicular abscess was a leading cause in our study which was also the condition in studies done by Fang Shen et-al, William Ong Lay Keat et al and Daisuke Ikeda et al, where testicular abscess formation secondary to testicular infarction due to epididymo orchitic had led to orchiectomy. Patient presents with pain, testicular swelling and on exploration pus was drained with testis found to be non-viable with abscess.^{12, 13, 14}

Androgen deprivation therapy has been the main modality of treatment for carcinoma prostate which can be either in form of surgical orchidectomy or medical castration. In our study majority cases of carcinoma prostate were elderly of > 60 age group which is seen in accordance with various literatures such as done by Kah Poh Lo et-al.⁴ Surgical orchidectomy was done for 45% cases in our study.

Bilateral orchidectomy has proven to be an efficient androgen deprivation therapy for Carcinoma prostate and was the leading indication in our study which is in accordance with findings of studies by, Ye Guang Tan ET -al, Oleg Rud et-al, T.J.D. Lane et-al, Philip Clark et-al.¹⁵

Radical orchidectomy was only performed in case of testicular malignancies and is the first step in treatment of almost all patients with testicular carcinoma as documented in study by Zachary L Smith et-al.¹⁶ Undescended testis increases the risk of both ipsilateral and contralateral testicular malignancies and is an indication to perform orchidectomy as documented by T F Ford et-al, E Rogers et-al.^{17, 18}

Bilateral subcapsular orchidectomy (BSO) was done for 15 cases, while Bilateral extracapsular orchidectomy (BEO) done for 12 cases of Carcinoma prostate in our study. Both groups of patients had no complaints regarding emptiness of scrotum and Subcapsular orchidectomy had better patient satisfaction as compared to extracapsular or total orchidectomy Similar findings were noted in study by Onkar singh et al.¹⁹



Conclusion: In our case series, the majority of orchidectomies were done for malignant cases and involved bilateral orchidectomy and the indications varied as per different age groups. Early presentation, prompt diagnosis, and timely surgical intervention is important for a better prognosis. Surgical orchidectomy is a simple procedure with few physical side effects, low mortality, and cost effectiveness. Testicular loss rates are approximately 100 % in cases where the diagnosis is missed, emphasizing the need for urgent management.

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