UDK: 616.66-002.6: 616.616.4

EFFECTIVE MANAGEMENT OF COMPLEX CURVATURE IN PEYRONIE'S DISEASE


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ПЕЙРОНИ КАСАЛЛИГИНИНГ МУРАККАБ ШАКЛЛАРИНИ ДАВОЛАШНИНГ САМАРАЛИ УСУЛЛАРИ

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ЭФФЕКТИВНЫЕ МЕТОДЫ ЛЕЧЕНИЯ ТЯЖЕЛЫХ ФОРМ БОЛЕЗНИ ПЕЙРОНИ

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Резюме. *Пейрони касаллиги билан оғриган беморларнинг тахминан 10 фоизи оғир эгрилик (>60 даража) ташкил этади. Мураккаб Пейрони касаллиги (ПК) билан оғриган беморларда муваффақиятли натижага эришиш учун турли усуллардан (қисқартириш процедуралари, узайтириш процедуралари ва жинсий олатни протез имплантацияси (ИПП)) фойдаланиш мумкин. Ушбу мақола Пейрони касаллигини даволашда қўлланиладиган бир неча хил жарроҳлик усулларини таҳлил қилишга қаратилган бўлиб, бунда мураккаб деформациялари бўлган беморларга алоҳида эътибор қаратилган. Материал ва методлар Пейрони касаллигида мураккаб эгриликни жарроҳлик йўли билан бошқаришга қаратилган мақолалар МЕДЛИНЕ ва ПубМед журналларида 1990 ва 2023 йиллар оралиғида чоп этилган. Натижалар қисқартириш процедуралари жинсий олатни қисқариши билан боғлиқ бўлиб, тирқиш, соат ойнаси деформацияси ёки қичишиш каби мураккаб ҳолатларда тавсия этилмайди. Натижалар Қисқартириш усуллари жинсий олатни қисқартириш билан боғлиқ бўлиб, бу каби мураккаб ҳолатларда тавсия этилмайди. Узайтириш тартиб-қоидаларисиз мураккаб эгриликларни ҳал қилиш учун жавоб беради эректил дисфункция (ЭД) ва мультипланар эгриликлар учун кўпроқ мос усул. Жинсий олатни протез имплантацияси (ИПП), қўшимча муолажалар билан ёки қўшимча муолажаларсиз, ЭД ва Пейрони касаллиги билан оғриган беморлар учун олтин стандарт ҳисобланади. ИПП ҳам бўлиши керак жинсий олатни беқарорлиги (ментеşе деформацияси) ҳолатлари учун афзал қилинган вариант ва барча мураккаб ҳолатларда юқори қониқиш кўрсаткичларини кўрсатди.*

Калит сўзлар: *Пейрони касаллиги, мураккаб эгрилик, пликация, жиддий эгрилик.*

Abstract: *About 10% of Peyronie's patients are complex cases with severe curvature (>60 degrees), ventral plaque, multiplanar curvature, hour-glass/hinge deformity, notching deformity, and ossifed plaque. In patients with complex Peyronie's disease (PD), diferent techniques (shortening procedures, lengthening procedures, and penile prosthesis implantation (IPP)) may be necessary to achieve successful result. This review aims to analyze the various surgical techniques employed in the management of Peyronie's disease, with a specifc focus on patients with complex deformity. Methods Articles focusing on the surgical management of complex curvature in Peyronie's disease were searched in MEDLINE and PubMed published between 1990 and 2023. Results Shortening procedures are linked to penile shortening and are not recommended for complex cases such as notching, hour-glass deformity, or ossifed plaque. Lengthening procedures are suitable for addressing complex curvatures without erectile dysfunction (ED) and are a more appropriate method for multiplanar curvatures. Penile prosthesis implantation (IPP), with or without additional procedures, is the gold standard for patients with ED and Peyronie's disease. IPP should also be the preferred option for cases of penile instability (hinge deformity) and has shown high satisfaction rates in all complex cases. Conclusion While surgical interventions for complex curvature in Peyronie's disease carry inherent risks, careful patient selection, meticulous surgical techniques, and post-operative care can help minimize complications and maximize positive outcome.*

Keywords*: Peyronie's disease, complex curvature, plication, severe curvature, penil prosthesis*

Introduction. Peyronie's disease (PD) is a urological condition characterized by the development of fbrous scar tissue within the penis, leading to penile curvature, pain, and erectile dysfunction (ED) [1]. Surgical treatment is indicated in the stable phase of the disease [2]. The main purpose of the surgical therapy for PD is to achieve functional and anatomical penis. The choice of the surgical method depends on the complexity of the curvature, erectile status and length of the penis. In the surgical treatment of Peyronie's disease, reconstructive surgeries (shortening and lengthening surgeries) are preferred in patients with good erectile capacity, while implantation of a penile prosthesis with or without deformity correction is preferred in patients with ED [3, 4]. About 10% of Peyronie's patients are complex cases with severe curvature (>60 degrees), ventral plaque, multiplanar curvature, hour-glass/hinge deformity, notching deformity, and ossifed plaque [5]. This review aims to analyze the various surgical techniques employed in the management of Peyronie's disease, with a specifc focus on patients with complex deformity.

Methods Articles focusing on the surgical management of complex curvature in Peyronie's disease were searched in MEDLINE and PubMed published between 1990 and 2023. The search terms used were "complex Peyronie's disease", "complex curvature", "notching", "hourglass", ''ventral curvature'', and "ossifed plaque". All papers identifed were English language papers.

Complex deformities. Notching–hourglass–hinge deformity Notching is a deformity characterized by a collapse in one area of the penis (Fig. 1).The "hourglass" deformity is defned as a bilateral indentation at the same level on the penile shaft; in other words, it can be briefy defned as bilateral notching. There may also be a "hinge" efect that causes the penis to be unstable when erect. Erectile dysfunction is usually associated with this type of deformity. Typically, there is noticeable softness in the part of the penis just before or after the indentation and insuffcient hardness on erection. When the notch in the penis is substantial and circumferential, it often causes severe pivoting of the penis during penetration. In a study evaluating 307 patients, the notching deformity and hourglass deformity rates were 2% and 2.6%, respectively [6]. In another study, pure notching deformity was reported in 89 (12.6%) of 703 patients. Out of these cases, unilateral notching deformity was detected in 62.9% and hour-glass deformity was reported in 34.8% with both notching and hourglass deformities encountered in 2.7%. Most of the deformities were located in the distal or proximal parts of the penis [7]. In another study in which patients over 65 years of age were evaluated, narrowing/notching deformity was reported in 62% of the patients [8]. In the patients with Peyronie's disease, during the followup process, erectile dysfunction is associated in 22–54% [9]. Especially in those with notching/hourglass deformities, the rate of ED is reported to be higher in the literature. In a study ED was detected at a rate of 68.5% in patients with notching deformity, and this rate was statistically higher compared to patients with other curvature types [7]. Patients with notching/hourglass deformity and good erectile capacity can be efectively treated with plaque incision and grafting. In patients with poor erectile function, placement of an infatable penile prosthesis is recommended with or without additional procedures [10]. Ventral curvature The ventral penile curvature rate is lower compared to the other curvatures. A retrospective study involving 1001 patients revealed a ventral curvature rate of 15%. The occurrence of ventral curvature can reach up to 20%, particularly among patients with a curvature exceeding 60 degrees [11]. In a recent study, men aged over 65 years showed a 10% incidence of ventral curvature [8]. In a study evaluating patients with ventral curvature, 57% were treated with Nesbit/plication procedures [4]. In experienced medical centers, plaque incision and grafting surgery can also be performed, involving the mobilization of the urethra and neurovascular bundle [12]. In patients with ventral curvature, for mobilizing the neurovascular bundle, lateral dissection of the neurovascular bundle may be preferred [13]. Severe curvature (>60°) Patients with penile curvature exceeding 60° in one or biplanar direction are also considered as having complex deformity. In those with good erectile capacity, tunical lengthening surgeries are performed, while in those with ED, treatment involves penile prosthesis implantation with additional shortening and lengthening procedures [2, 13, 14] (Fig. 2). In a study, the efectiveness of penile plication was compared in patients with severe curvature and patients with mild to moderate curvature. The success rate was found to be similar in those with severe to mild/moderate curvature (74.5% vs. 74.5%). The conclusion of the study is that shortening procedures could be preferred in selected cases, even in patients with severe deformity [15]. In patients with severe deformity, ventral curvature is encountered more and lateral curvature is less frequent, whereas the incidence of ventral curvature is higher compared to all type of deformities [11]. The presence of ED is an predictive parameter in the selection of type of surgical. A study evaluating the relationship between the degree of curvature and ED rate found no relationship based on the degree of curvature (70.7% and 68.4%) [9].

Management of patients with complex curvature in Peyronie's disease. In order to assess the type and severe of the deformity, the penis should be examined in a faccid and erect state. Particularly, examining the penis while erect is an essential step for evaluating complex curvatures [2]. Objective assessment of the curvature can be performed by inducing an erection through intracavernosal injection of a vasoactive agent. The assessment of deformity by ultrasound, computed tomography, or magnetic resonance imaging is not reccomended [2]. However, ultrasound has a role in distinguishing calcifed plaques. Similarly, the AUA guideline recommend before invasive treatment curvature assessment with intracavernosal injection (ICI) [20]. The ICI test is considered as the gold standard for evaluating complex deformities such as notching and hourglass type, in addition to providing an objective assessment of penis length and curvature degree [21]. Shortening procedures involve reducing the convex side of the penis from the area where it is most pronounced, aiming to straighten the penis. Various shortening procedures, including Nesbit, have been described. The success rate and satisfaction rate of these shortening procedures are similar [22]. Correction rate for curvature range between 42 and 100%, with overall satisfaction varying from 68 to 100% [22]. The shortening procedures are associated with shortening of penis up to 2.5 cm [23].

Conclusion Complex curvature in Peyronie's disease presents a challenging and often distressing condition for afected patients. Treatment options for complex curva-

ture in Peyronie's disease vary depending on the individual case. Surgical intervention, including shortening techniques (penile plication, Nesbit), lengthening procedures (plaque incision with or without grafting) or penile prosthesis implantation with or without grafting, may be necessary to achieve satisfactory outcome (Fig. 4). In conclusion, shortening procedures are linked to penile shortening (up to 2.5 cm) and are not recommended for complex cases such as notching, hourglass deformity, or ossifed plaque. Lengthening procedures are suitable for addressing complex curvatures without erectile dysfunction (ED) and are a more appropriate method for multiplanar curvatures. Penile Prosthesis Implantation (IPP), with or without additional procedures, is the gold standard for patients with ED and Peyronie's Disease. IPP should also be the preferred option for cases of penile instability (hinge deformity) and has shown high satisfaction rates in all complex cases. While surgical interventions for complex curvature in Peyronie's disease carry inherent risks, careful patient selection, meticulous surgical techniques, and postoperative care in experienced centers can help minimize complications and maximize positive outcome.

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ЭФФЕКТИВНЫЕ МЕТОДЫ ЛЕЧЕНИЯ ТЯЖЕЛЫХ ФОРМ БОЛЕЗНИ ПЕЙРОНИ

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Резюме. *Примерно 10% пациентов с болезнью Пейрони страдают от тяжелых искривлений (>60 градусов). Для достижения успешных результатов у пациентов с тяжелыми формами болезни Пейрони (ПК) могут применяться различные методы (процедуры укорочения, процедуры удлинения и имплантация пенильных протезов (ИПП)). Настоящая статья посвящена анализу различных хирургических методов, применяемых при лечении болезни Пейрони, с особым вниманием к пациентам с тяжелыми деформациями. Материалы и методы: статьи, посвященные хирургическому лечению сложных искривлений при болезни Пейрони, были найдены в базах MEDLINE и PubMed, опубликованные в период с 1990 по 2023 годы. Результаты: процедуры укорочения связаны с сокращением полового члена и не рекомендуется использовать при сложных случаях, таких как трещины, деформация «часовых стекол» или зуд. Методы укорочения не рекомендуется использовать при сложных случаях. Процедуры удлинения являются более подходящими для лечения эректильной дисфункции (ЭД) и многоплоскостных искривлений. Имплантация пенильных протезов (ИПП) является золотым стандартом для пациентов с ЭД и болезнью Пейрони, как с дополнительным, так и без дополнительного лечения. ИПП является предпочтительным вариантом при нестабильности полового члена (деформация «мятой газеты») и показал высокие показатели удовлетворенности в сложных случаях.*

Ключевые слова: *болезнь Пейрони, сложное искривление, пластика, тяжелое искривление.*