

VIDEOS IN CLINICAL MEDICINE
SUMMARY POINTS

Reduction of Paraphimosis in Boys

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The following text summarizes information provided in the video.

OVERVIEW

Paraphimosis (Fig. 1) is a condition in which the foreskin is fully retracted behind the ridge of the glans. Because the foreskin remains behind the ridge of the glans, it may cause irritation and swelling, making it impossible for the foreskin to be pulled back over the glans. This painful condition requires immediate medical attention and early reduction. If left untreated, paraphimosis can have severe consequences, including strangulation of the glans and tissue necrosis. Given the increasing number of uncircumcised boys worldwide, paraphimosis may become more common.

Most patients with paraphimosis present to pediatric emergency departments, although a rapid diagnosis may be made and appropriate treatment administered by any practitioner who is familiar with the reduction technique. Medical therapy for paraphimosis involves reassuring the patient and the parents, reducing the preputial edema, and positioning the prepuce back over the glans. Several methods of reducing the prepuce and the swelling of the glans penis have been described, some of which are invasive and painful. The manual reduction described here is the least traumatic method, generally requiring only topical anesthesia and gentle reduction.

CAUSES

In boys, paraphimosis occurs only in the absence of circumcision or in cases of partial circumcision, when the child himself, an uninformed parent or caregiver, or a health care professional retracts the prepuce and then inadvertently leaves it in its retracted position. This may occur after cleaning or examining the penis or catheterizing the urethra.

Any condition that impairs preputial softness favors the development of paraphimosis. Examples include angiomas or warts of the prepuce and preputial scarring after burns or inflammation. In adolescents and young adults, paraphimosis has also been reported after genital piercing,¹ sexual intercourse,² and erotic dancing.³

INDICATIONS

Any patient with a paraphimosis requires urgent medical care. Reduction should be performed immediately.

CONTRAINDICATIONS

Necrosis and ulceration of the foreskin or glans are the main contraindications to the manual reduction of paraphimosis. The procedure should also be avoided in patients with angiomas, warts, or other dermatologic lesions of the foreskin or glans. If any of these contraindications are present, a surgical consultation should be obtained immediately to determine whether there is a need for formal surgical reduction of the paraphimosis. The practitioner should ensure that the penile swell-



Figure 1. Paraphimosis.

ing is due to paraphimosis and not to another condition, such as a constricting band or insect bites.

Since many patients are allergic to latex, it is important to be certain that there is no history of latex allergy. If the patient is allergic to latex, or if there is any doubt as to whether he is allergic, latex-free gloves should be used during the procedure.

EQUIPMENT

The equipment required for manual reduction of paraphimosis includes nonsterile gloves, gauze pads, nonalcoholic antiseptic solution (containing chlorhexidine or povidone-iodine), and an anesthetic gel or cream that does not contain epinephrine.

PATIENT PREPARATION

The procedure should be explained in detail to the parent or caregiver and to the patient if he is old enough to understand. Explain the causative mechanism of paraphimosis and the benefits, risks, and potential complications of the procedure. Find out from the parent or caregiver whether the patient has a history of latex or iodine allergies, and obtain oral informed consent to perform the procedure.

The paraphimosis may be effectively anesthetized by applying a liberal amount of anesthetic gel or cream to the glans and foreskin. Because commonly used local anesthetic agents contain lidocaine, these substances should be avoided in infants younger than 3 months of age and in patients with a predisposition for methemoglobinemia, such as glucose-6-phosphate dehydrogenase deficiency. After applying the anesthetic agent, wrap a dry gauze pad around the swollen area of the penis to prevent leakage of the applied material. The pad should be in direct contact with the anesthetic gel or cream. Leave it in place for a minimum of 10 minutes before attempting the reduction procedure. An alternative approach to pain control is the use of a penile-nerve block.

If there is a need for greater pain control or the patient is anxious, it may be useful to induce conscious sedation or administer inhaled nitrous oxide in addition to the local anesthetic. Your decision will depend on the needs of the patient and the protocols of your institution.



Figure 2. Performing the Procedure.

REDUCTION PROCEDURE

Before you begin the procedure, make sure that you are comfortably seated beside the patient, with the bed or examination table at a height that allows you to rest your elbows on its surface while performing the procedure (Fig. 2). Although it generally takes only about 10 to 15 minutes to successfully complete a reduction in which manual pressure is used, the procedure can take as long as 30 minutes. Once you are sure that you will be comfortable during the procedure, wash and disinfect your hands and put on nonsterile gloves.

Place the patient in the supine position, and gently disinfect the genital area with antiseptic-soaked pad swabs. Check the effectiveness of the topical anesthetic before attempting the reduction. If a urethral catheter or preputial implant has been placed, remove it. Carefully inspect the penis to make sure that no constricting bands or foreign bodies are present.

If the swelling of the foreskin is moderate, attempt gentle reduction. Using the tip of one or both thumbs, push the glans through the foreskin opening while simultaneously using the index and middle fingers of both hands to pull distally on the retracted foreskin in order to slide it back over the glans (Fig. 3). Because the swelling resolves slowly, this step may take longer than expected.



Figure 3. Reduction of a Paraphimosis.

In patients with severe swelling of the foreskin, reduce the swelling before at-

tempting to perform the procedure. You can accomplish this by firmly grasping the swollen area and gently squeezing its circumference for several minutes. You may need to use a gauze pad to keep the penis from slipping out of your hands. Once the edema of the foreskin has been reduced and the foreskin looks flaccid, you may attempt manual reduction.

Reduction of the paraphimosis is complete when the phimotic ring is drawn back over the glans. Confirm that the procedure is complete by ensuring that the foreskin fully covers the glans. The patient's pain should be resolved once the paraphimosis has been successfully reduced.

Attempts at manual reduction are not always successful. If the procedure is not effective, obtain a surgical consultation immediately to determine whether a formal surgical reduction of the paraphimosis is needed.⁴

POSTPROCEDURE INSTRUCTIONS

To prevent the recurrence of paraphimosis, inform the patient, parent, or caregiver that the prepuce should be drawn back over the glans every time the penis is manipulated. Explain that the foreskin should not be retracted for any reason for approximately 1 week after the paraphimosis has been reduced. A follow-up appointment should be made. This appointment has two purposes: it serves as a teaching session, during which the practitioner shows the patient, parent, or caregiver how to clean the penis, and it gives the practitioner an opportunity to make sure that everything has healed.

COMPLICATIONS

The most frequent complication of manual reduction of a paraphimosis is the tearing of the preputial ring.⁵ This minor complication can be avoided by accomplishing gentle but sustained reduction of the preputial edema before the foreskin is slid back over the glans. If tearing occurs, treat it by applying antiseptic solution to prevent the development of an infection. This complication predisposes the patient to preputial scarring and the recurrence of phimosis.

SUMMARY

Paraphimosis is a urologic emergency that must be treated immediately in the emergency department. In most cases, manual reduction, which is a noninvasive technique, is effective.

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Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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