

椎体后凸成形术和椎体成形术

如何做准备及预期结果

本讲义讲解了和椎体后凸成形术 (kyphoplasty) 和椎体成形术 (vertebroplasty), 这些是用于加强骨折脊柱的治疗方法。讲义介绍了这些治疗方法的原理、操作步骤、治疗前的准备以及治疗期间的预期情况。

我为什么需要这种治疗?

脊柱骨折会导致严重的背痛和活动受限。医生认为, 椎体后凸成形术和 (或) 椎体成形术可能有助于缓解疼痛, 并防止椎骨进一步塌陷。

该程序如何进行?

椎体后凸成形术 和 椎体成形术 是用于加强某节断裂的椎骨 (多节脊柱椎骨中的其中一节) 的治疗方法。这两种治疗方法都是使用影像来引导医疗操作。它们不涉及做手术。

椎体后凸成形术 - 医生会在影像引导下, 将一根针插入骨折的椎骨里。然后, 医生会将一个球囊装置通过针头放入, 并扩大球囊至适当的大小, 在内形成一个空腔。之后, 医生会将球囊取出。用骨水泥填充由球囊造成的空腔, 从而增强椎骨的强度和稳定性。

脊椎支撑器 - 医生会在影像引导下, 将一根针插入骨折的椎骨。针会被替换成一根小管。植入物 (支撑器) 会通过小管插入。植入物 (支撑器) 会被扩张以减少弯曲畸形空间并形成一个小空腔。然后用骨水泥填充这个空腔。这会增加椎骨的强度和稳定性。

椎体成形术 - 医生会在影像引导下, 将一根针插入骨折的椎骨。骨水泥会被注入骨折处。这会增加椎骨的强度和稳定性。

您的医生会与您讨论最适合您的治疗方法。

有哪些风险和副作用?

最常见的风险包括出血、感染、邻近神经结构的暂时性损伤以及其他非神经周围结构的损伤。

术后, 您可能无法得到预期的疼痛缓解, 或者可能会出现严重的手术相关疼痛。手术相关的疼痛会在几天内逐渐缓解。

还有一些不太常见但有时很严重的副作用和并发症。您的医生会在您开始治疗前与您讨论这些风险。请确保在治疗开始前您的所有疑问都得到解答。



椎体后凸成形术和椎体成形术是治疗骨折的方法。



扫描这码以获取本手册的电子版。

镇静剂 Sedation

手术前，我们会通过您手臂上的一根静脉导管(IV)注射 **镇静剂 sedative**（一种让您放松的药物）。您会保持醒觉，但会感到困倦。这称为 **中度镇静 moderate sedation**。手术后，您仍会在一段时间内感到困倦。

对于某些人来说，使用中度镇静剂并不安全。如果您也遇到这种情况，则需要进行 **全身麻醉 general anesthesia**（使用在手术过程中让您入睡的药物）。

如有下列情况，请**立即**告知我们：

- 过去曾需要麻醉才能完成基本手术
- 患有睡眠呼吸暂停症 **sleep apnea** 或慢性呼吸问题（您可能在睡觉时使用 CPAP 或 BiPAP 设备）
- 使用高剂量的处方止痛药，例如阿片类药物 **opioids**。
- 患有严重的心脏、肺或肾脏疾病
- 由于背部或呼吸问题而不能平躺约 1 小时
- 在进行医疗程序过程中很难静卧
- 体重超过 300 磅（136 公斤）

如果您有任何以下健康问题，我们可能需要给您开其他药物。除了镇静剂，您可能还会接受以下药物：

- 仅使用局部麻醉剂 **local anesthetic**（麻药），例如利多卡因 **lidocaine**。
- 使用 **局部麻醉剂** 和一种止痛药或抗焦虑药。这被称为 **轻度镇静 minimal sedation**。
- **全身麻醉 general anesthesia**（使人入睡的药物）。该药物由麻醉医疗服务提供者施药。

手术前

手术前 5 天内，护士会给您打电话。他们会给您提供重要指导，并解答您的任何疑问。

- 如果您的英语水平不足以理解护士的指示或手术细节，请立即告知我们。我们将安排医院翻译人员为您提供帮助。您的家人或朋友不可为您做翻译。
- 大多数患者在接受此手术前 14 天之内需要进行验血。我们或许可以在您前来接受手术时为您进行验血。如果需要在手术前采集血样，我们会通知您。
- 如果您正在服用任何血液稀释药物【例如华法林 **Coumadin (Warfarin)**、依诺肝素钠 (**Lovenox**)、法安明 (**Fragmin/达肝素钠**) 或波立维 (**Plavix**)】，您可能需要在手术前 3 至 9 天停用这些药物。但除非您的医生或护士指示您停用，否则请勿停用这些药物。我们会根据需要为您提供指导。

您必须安排一位负责任的成年人在手术后开车送您回家，并在当天剩余时间陪伴您。您不能自己开车回家，也不能独自乘坐公交车、出租车或班车。

手术当天

为做好准备接受镇静剂，请严格遵循以下指示。从手术前那个晚上的午夜开始：

- 不要吃或喝任何东西。
- 请勿服用任何要求您在手术前停止服用的药物。
- 如果必须服药，请只用一小口水送服。除非医生或护士指示，否则请勿停止服药。
- 不要服用维生素或其他补充剂。它们会刺激空腹。

请带上您所服用的所有药物的一份清单前往医院。

请计划大概要耗费一整天的时间在医院。如果您的手术开始时间有所延迟，通常是因为我们需要治疗出现了意外的紧急健康问题的其他患者。如果出现这种情况，感谢您的耐心等待。

在医院

工作人员会给您一件患者衣服和一个袋子，让您放上您自己的衣物和物品。这时您可以顺便使用洗手间。

工作人员会带您前往术前预备区。在那里，护士会进行术前评估。您可以邀请一位家人或朋友在术前预备区陪伴您。

我们会开始给您放置一条静脉输液管。我们将通过静脉注射给您输液和输药物。

有一位介入放射科专家会向您讲述该手术过程，回答您的任何问题，并要求您签署一份同意书（如果当时您尚未签署）。

手术后

您将被转移到医院短期住院病房。入住后：

- 您的家人或朋友将能够陪伴您。
- 您需要接受 2 至 4 小时的监控。
- 您可以吃喝。

在您起床行走之前，我们会对您进行评估，以确保您可以安全行走。护士或患者护理技师（PCT）会协助您下床行走。

如果满足以下条件，您当天就可以回家：

- 您可以吃东西、喝水和使用洗手间
- 您的恶心和疼痛已得到控制
- 您的生命体征稳定

24 小时内

镇静药物会在您体内停留数小时。它可能会影响您的判断力。您还可能会感到头晕目眩。因此，在 24 小时内：

- 不要驾驶汽车。
- 请勿操作机械或电动工具。
- 请勿饮酒。
- 除非医生开具处方，否则不要服用镇静剂或安眠药等药物。
- 不要做出重要决定或签署法律文件。
- 不要负责照顾儿童、宠物或需要照顾的成年人。

为了帮助康复：

- 只进行轻微的活动并充分休息。
- 应该有人陪你过夜。
- 照常进食。
- 多喝水。
- 开始进食后立即恢复服药。只服用医生开具或批准的药物。除非另有指示，否则您可以在手术后的第二天早上重新开始服用血液稀释药物。

48 至 72 小时

- 不要提起任何重量超过 5 至 10 磅的物体（一加仑牛奶重约 9 磅）。
- 只进行轻柔的活动。您可以随着时间的推移逐渐增加活动量。

敷料护理

- 24 小时内，用敷料覆盖针刺伤口部位。确保其清洁干燥。
- 24 小时后，取下敷料，检查伤口处是否有任何需要处理的迹象。请参阅以下“何时要致电”的列项。
- 24 小时后即可淋浴。请勿擦洗针刺的部位。用温肥皂水轻轻冲洗针刺部位。淋浴后，用干净的毛巾轻轻拍干针刺部位。
- 不要在伤口处涂抹乳液、药膏或粉末。你可以贴上新的伤口贴。
- 如果使用了新的伤口贴，请在接下来的几天内每天更换。取下伤口贴时务必检查伤口处。
- 在伤口完全愈合之前，请勿浸澡、泡热水澡、游泳或让伤口被水覆盖。
- 您可能会在 1 至 2 天内在伤口部位感到有点不适。

何时要致电

如果您有以下情况，请立即致电我们：

- 轻微发烧、疼痛、穿刺部位发红、肿胀或觉头晕
- 轻微呼吸困难、胸闷或胸痛
- 任何其他非紧急问题或疑虑

如果您出现以下情况，请拨打 911 并前往最近的急诊室：

- 严重出血或任何轻压约 15 分钟后仍无法止血的出血
- 伤口流液
- 发烧超过 101° F (38.3° C) 或发冷
- 呼吸困难且越来越严重
- 新出现的胸痛
- 头晕
- 呕吐

给谁致电

华盛顿大学医疗中心（UWMC）和西北医院（Northwest Hospital）

工作日早上 8 点至下午 4:30，请拨打介入放射科（IR）：

- Montlake 蒙特湖院区：206.598.6209，选择 2
- Northwest 西北医院：206.598.6209，选择 3

港景医疗中心（Harborview Medical Center）

工作日早上 8 点至下午 4:30，请拨打介入放射科（IR）电话：
206.744.2857。

有疑问吗？

您的提问很重要。如果您有任何疑问或顾虑，请致电您的医生或医疗服务提供者。

UWMC - Montlake:

华大医疗中心-蒙特湖院区：

206.598.6209，选择 2

UWMC - Northwest:

华大医疗中心-西北医院：

206.598.6209，选择 3

Harborview Medical Center:

港景医疗中心

206.744.2857

非工作时间、周末及节假日：

请拨打 206.598.6190 并要求
联系当班介入放射科（IR）
住院医师。

Kyphoplasty and Vertebroplasty

How to prepare and what to expect

This handout explains vertebroplasty and kyphoplasty, treatments to strengthen a broken backbone. It describes how the treatments work, how they are done, how to prepare, and what to expect during the treatment.

Why do I need this treatment?

Fractures in the bones of the spine (vertebrae) can cause severe back pain and loss of movement. Your doctors believe that a kyphoplasty and/or vertebroplasty may help to relieve your pain and to prevent further collapse of the vertebrae.

How is the procedure done?

Vertebroplasty and *kyphoplasty* are treatments used to strengthen a broken *vertebra* (one of the bones in the backbone). Both treatments use imaging to guide the procedure. They do not involve surgery.

Kyphoplasty- Using image-guided X-rays, your doctor will insert a needle into the fractured vertebrae. A balloon device is inserted through the needle and inflated just the right amount to create a cavity. Then the balloons are removed. The spaces created by the balloons are filled with bone cement. This gives strength and stability to your vertebrae.

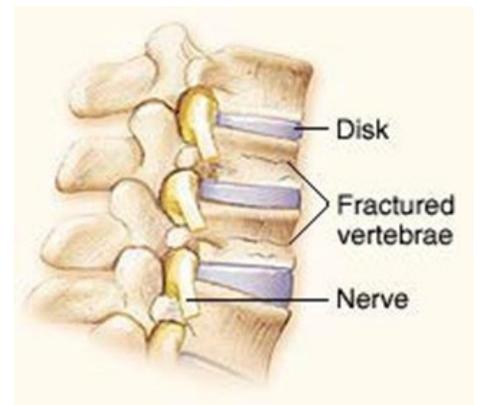
Spine jack - Using image-guided X-rays, your doctor will insert a needle into the fractured vertebrae. The needle will be exchanged for a small tube. An implant will be inserted through the tube. The implant will be expanded to reduce the deformity and create a small cavity. This space is then filled with bone cement. This gives strength and stability to your vertebrae.

Vertebroplasty- Using image-guided X-rays, your doctor will insert a needle into the fractured vertebrae. Bone cement will be injected into the fracture. This gives strength and stability to your vertebrae.

Your doctor will talk to you about what is the most appropriate procedure for you.

What are the risks and side effects?

The most common risks include bleeding, infection, temporary injury to adjacent neural structures, and injury to other non-neural surrounding structures.



Vertebroplasty and kyphoplasty are ways to treat broken bones



Scan for a
digital copy of
this handout.

Following the procedure, there is a risk you may not experience the pain relief you were anticipating, or you may have significant procedure-related pain. The procedure-related pain will improve over a few days.

There are other much less common but sometimes serious side effects and complications. Your doctors will talk with you about these risks before you start treatment. Make sure all your questions are answered before your treatment begins.

Sedation

Before your procedure, you will be given a *sedative* (medicine to make you relax) through an *intravenous line* (IV) in one of your arm veins. You will stay awake but feel sleepy. This is called *moderate sedation*. You will still feel sleepy for a while after the procedure.

For some people, using moderate sedation is not safe. If this is true for you, you will need *general anesthesia* (medicine to make you sleep during the procedure).

Let us know **right away** if you:

- Have needed anesthesia for basic procedures in the past
- Have sleep apnea or chronic breathing problems (you might use a CPAP or BiPAP device while sleeping)
- Use high doses of an opioid pain medicine
- Have severe heart, lung, or kidney disease
- Cannot lie flat for about 1 hour because of back or breathing problems
- Have a hard time lying still during medical procedures
- Weigh more than 300 pounds (136 kilograms)

If you have any of these health issues, we may need to give you different medicines. Instead of a sedative, you might receive:

- Only a *local anesthetic* (numbing medicine), such as lidocaine.
- A local anesthetic and a single pain or anxiety medicine. This is called *minimal sedation*.
- *General anesthesia* (medicine to make you sleep). This medicine is given by an anesthesia provider.

Before Your Procedure

A nurse will call you within 5 days of your procedure. The nurse will give you important instructions and answer any questions you have.

- If you do not understand English well enough to understand the instructions from the nurse or the details of the procedure, tell us right away. We will arrange for a hospital interpreter to help you. A family member or friend cannot interpret for you.
- Most patients need blood tests done within 14 days of this procedure. We may be able to do your blood tests when you arrive for your procedure. We will tell you if we need a blood sample before that day.

- If you take any blood-thinning medicines (such as Coumadin, Lovenox, Fragmin, or Plavix), you may need to stop taking the medicine for 3 to 9 days before your procedure. Do NOT stop these medicines unless your doctor or nurse has told you to do so. We will give you instructions as needed.

You must arrange for a responsible adult to drive you home after your procedure and stay with you the rest of the day. You cannot drive yourself home or take a bus, taxi, or shuttle alone.

The Day of Your Procedure

To prepare for sedation, follow these instructions exactly. Starting at midnight, the night before your procedure:

- Do not eat or drink anything.
- Do not take any of the medicines that you were told to stop before this procedure.
- If you must take medicines, take them with only a sip of water. Do not skip them unless your doctor or nurse tells you to.
- Do not take vitamins or other supplements. They can upset an empty stomach.

When you go to the hospital, bring a list of all the medicines you take.

Please plan to spend most of the day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people who have unexpected and urgent health issues. Thank you for your patience if this occurs.

At the Hospital

A staff member will give you a hospital gown to put on and a bag to put your belongings in. You may use the restroom at that time.

A staff member will take you to a pre-procedure area. There, a nurse will do a pre-procedure assessment. A family member or friend can be with you in the pre-procedure area.

An IV line will be started. You will be given fluids and medicines through the IV.

Your interventional radiology specialist will talk with you about the procedure, answer any questions you have, and ask you to sign a consent form, if you have not already done this.

After Your Procedure

You will be moved to a room on the short-stay unit at the hospital. Once you are settled into your room:

- Your family member or friend will be able to be with you.
- You will need to be monitored for 2 to 4 hours.
- You will be able to eat and drink.

Before you get up to walk, we will assess you to make sure you can walk safely. A nurse or patient care technician (PCT) will help you get out of bed.

You will be able to go home the same day when:

- You can eat, drink, and use the restroom
- Your nausea and pain are under control
- Your vital signs are stable

For 24 Hours

The medicine that you were given to make you sleepy will stay in your body for several hours. It could affect your judgment. You may also be lightheaded or feel dizzy. Because of this, for 24 hours:

The medicine that you were given to make you sleepy will stay in your body for several hours. It could affect your judgment. You may also be lightheaded or feel dizzy. Because of this, for 24 hours:

- Do not drive a car.
- Do not use machines or power tools.
- Do not drink alcohol.
- Do not take medicines such as tranquilizers or sleeping pills unless your doctor prescribed them.
- Do not make important decisions or sign legal documents.
- Do not be responsible for children, pets, or an adult who needs care.

To help your recovery:

- Do only light activities and get plenty of rest.
- A responsible adult should stay with you overnight.
- Eat as usual.
- Drink lots of fluids.
- Resume taking your medicines as soon as you start to eat. Take **only** the medicines that your doctors prescribed or approved. **You may restart blood thinning medications the morning after your procedure unless told otherwise.**

For 48 to 72 Hours

- Do not lift anything that weighs more than 5 to 10 pounds (a gallon of milk weighs almost 9 pounds).
- Do only gentle activities. You may gradually increase your activity over time.

Dressing Care

- For 24 hours, keep the needle insertion site covered with the dressing. Make sure it stays clean and dry.
- After 24 hours, remove the dressing and check the site for any signs that your wound needs care. See the list under “When to Call,” on page 5.
- You may shower after 24 hours. Do not scrub the needle insertion site. Allow warm soapy water to run gently over the site. After showering, gently pat the site dry with a clean towel.

- Do not apply lotion, ointment, or powder to the site. You may apply a new bandage.
- If you apply a new bandage, change it every day for the next few days. Always check the site when you remove the bandage.
- Do not take a bath, sit in a hot tub, go swimming, or allow your site to be covered with water until it is fully healed.
- You may have a little discomfort at the site for 1 to 2 days.

When to Call

Call us right away if you have:

- Mild fever, pain, redness, swelling at the puncture site or dizziness
- Mild shortness of breath, chest tightness or chest pain
- Any other non-urgent questions or concerns

Call 911 and go to the nearest emergency department if you have:

- Severe bleeding or any bleeding that does not stop after you have applied gentle pressure for about 15 minutes
- Drainage from your incision
- Fever higher than 101°F (38.3°C) or chills
- Shortness of breath that is getting worse
- New chest pain
- Dizziness
- Vomiting

Who to Call

University of Washington Medical Center and Northwest Hospital

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department:

- Montlake: 206.598.6209, option 2
- Northwest: 206.598.6209, option 3

Harborview Medical Center

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department at 206.744.2857.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

UWMC – Montlake:

206.598.6209, option 2

UWMC – Northwest:

206.598.6209, option 3

Harborview Medical Center:

206.744.2857

After hours and on weekends and holidays:

Call 206.598.6190 and ask to page the Interventional Radiology resident on call.