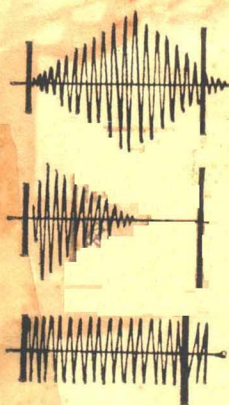


Understanding Heart Sounds and Murmurs

心音和心脏杂音



中华医学会衡阳分

致 读 者

这本录音带录制了正常和异常心音及各种心脏疾病的杂音，是由美国心血管教授Tilkian和Conover 编著的《Understanding Heart Sounds and MurMurs》一书所配的听诊练习。该录音带真实准确地记录了各种异常心音及心脏杂音，是临床医师及医学生学习心脏听诊的很好教材。同时也能提高您的英语水平。建议您播放时最好采用高质量的录音机，在安静的环境下，采用钟型听诊器听录音，将收到更好的效果。

该录音带的英文解说原版未配有英语书面材料，是由我学会苏章辉同志用听写的方法，将全部英文解说记录并翻译成中文经张驰主任医师，孙明副教授，杨长杰主任校对，初步定稿，由周平伟、赵大民医生编辑，现翻印成中英文对照本，作为内部交流学习。因我们水平有限，加之时间仓促，翻译中难免有不当之处。请广大读者批评指正，以改进我们的工作。

中华医学会衡阳分会

一九八五年四月二十五日

这套录音是Tilkian和Conoves所著的“心音和杂音 (Understanding heart sounds and murmurs) 一书的补充。建议你在听这录音带之前, 仔细阅读该教科书和插图说明, 为了得到最好的效果, 你必须用一个高质量的录音机并带有适宜的喇叭能产生乐音的扬声器。在安静的室内, 应用钟型胸件听诊器收听将改善你所听到的声音的音质, 小而轻便录音机不会产生满意的心音, 不宜应用。

让我们开始在左第二肋间听正常第一和第二心音 (S_1 和 S_2)。

(心音)

这是大家熟悉的“lab—tab lab—tab”没有额外的心音或杂音。

现在注意听第二心音, 注意 A_2 和 P_2 二种成份相距大约 30 毫秒。

(心音)

This tape is a supplement to the text "Understanding Heart Sounds and Murmurs" by Tilikian and Conover. You're recommended that you read the text and study the illustrations carefully before using the tape. Also for best result, you should use quality tape player attached to speakers suitable for musical production. Listening in a quiet room and using the bell of the stethoscope will improve on the quality of what you hear. Small portable recorders used for voice recordings will not reproduce the heart sounds satisfactorily, and should not be used.

Let us start with the normal first and second heart sounds, S1 and S2 as heard at the second left intercostal space.

(sounds)

This is the familiar "lab-tab, lab-tab" with no additional sounds or murmurs.

Concentrate on the second sound and notice the two components A2 and P2 approximately 30 milliseconds apart.

(sounds)

当你移动听诊器到正常人的心尖区， P_2 将难以听到，
这时第二心音仅有一个成份（ A_2 ）。

（心音）

这是心尖区听到的正常的心音；第二心音只有一个成份
（ S_2 ）。

（心音）

听诊器移到左第二肋间听正常第二心音的肺动脉成份。

（心音）

有些情况例如右束支传导阻滞，增加 A_2 和 P_2 之间间期，
使 P_2 延迟，产生一个宽的第二心音分裂，这种第二心音分
裂在左第二肋间听得最清楚。

（心音）

注意第二心音宽分裂相距50毫秒

（心音）

现在，第二心音分裂相距70毫秒。

（心音）

假如，并有肺动脉高压第二心音分裂在心尖区也能听
到，同时 P_2 将增强。

（心音）

As you move the stethoscope to the apex in the normal person, P2 is not heard well, and the second sound has one component, A2. (sounds)

These are the normal heart sounds at the apex with a single component of S2 (sounds)

Move back to the second left intercostal space to hear the normal pulmonic component of the second heart sound. (sounds)

Several conditions, for example, right bundle branch block increase the interval between A2 and P2 causing a late, or delayed P2 and thus producing a widely split second sound best heard at the second left intercostal space. (sounds)

Note the wide splitting of the second sound at 50 milliseconds. (sounds)

And now at 70 milliseconds apart. (sounds)

If there is associated pulmonary hypertension then the wide splitting of S2 will be appreciated at the apex as well

常听到的异常心音是收缩期前心房奔马律或称为第四心音 (S_4)，它和心房收缩时间一致。在第一心音之前40~110毫秒，常发生在冠心病和高血压。

现在开始听心尖区的正常心音。

(心音)

现在听第四心音， S_4 奔马律，它在第一心音前110毫秒。

(心音)

为了获得最好效果，你必须让病人取左侧卧位，用钟型听诊器在心尖区听诊。

(心音)

第四心音常发生在严重的高血压，可伴有响亮的第二心音。

(心音)

注意第二心音的增强。

(心音)

as at the base of the heart. P2 will be accentuated. (sounds)

The frequently heard abnormal sound is the presystolic atrial gallop, or the fourth heart sound (S4) coinciding with atrial contraction. This sound precedes the first heart sound by 40-110 milliseconds and is frequently associated with coronary artery disease or hypertension. Start with the normal heart sounds at the apex. (sounds)

Now listen for the S4 gallop preceding the first heart sound by 110 milliseconds. (sounds)

For best result, you should use the bell of the stethoscope and listen at the apex with the patient in the left lateral position. (sounds)

An S4 is frequently present with severe hypertension, and this may be accompanied by a loud second sound. (sounds)

Note the increased intensity of the second heart sound. (sounds)

第四心音可能靠第一心音较近相距80毫秒。

(心音)

或只相距40毫秒。

(心音)

S_4 这样靠近第一心音时,就难与第一心音的第一成份区别。

复习正常心尖区第一和第二心音。

(心音)

S_4 心房奔马律与 S_1 相距110毫秒。

(心音)

与 S_1 相距80毫秒。

(心音)

与 S_1 相距40毫秒。

(心音)

第四心音奔马律可能伴随窦性心动过速,这是心率每分钟100次的收缩期前的 S_4 奔马律。

(心音)

另一种重要的心音是室性奔马律,或称第三心音,亦称为 S_3 奔马律或舒张早期的奔马律。

An S4 sound may be closer to the first heart sound at 80 milliseconds apart.

(sounds)

Or only 40 milliseconds apart.

(sounds)

When an S4 is so closed to the first heart sound it may be difficult to distinguish it from the first component of the first heart sound.

For review, normal first and second heart sounds at the apex. (sounds)

S4 atrial gallop at 110 milliseconds from S1. (sounds)

At 80 milliseconds from S1. (sounds)

And 40 milliseconds from S1.

(sounds)

An S4 gallop may be associated with sinus tachycardia. Here is the presystolic S4 gallop at the heart rate of 100 per minute. (sounds)

Another important heart sound is the ventricular gallop or the third heart sound also called S3 gallop or protodiastolic gallop. When at the bedside use

在临床上用钟型听诊器轻压在胸壁取左侧卧位心尖区听诊。

现在开始听正常心音 (心音)

现在你将听到左室第三心音,它在第二心音后150毫秒。

(心音)

“Lab—Tab—ab, Lab—Tab—ab”, “ab”就是 S_3 。

(心音)

S_3 奔马律可以很微弱,要非常注意才能听到。

(心音)

S_3 常在心衰时听到并伴有快速的心室律。

这里听到一个 S_3 奔马律同时伴有窦性心动过速,心率每分钟110次。

(心音)

右室产生的 S_3 奔马律,在胸骨左缘下部听得最清楚,

现在你已认识了第三心音,我们将加上以前学习过的

S_4

the bell of the stethoscope press gently against the skin and listen at the apex in the left lateral position.

Start with the normal heart sound.

(sounds)

Now you will hear a left ventricular S₃ and 150 milliseconds after the second sound.

(sounds)

"Lab-tab-ab, lab-tab-ab", the 'ab' timing with S₃.

(sounds)

S₃ gallops can be faint, and heard only with utmost concentration.

(sounds)

S₃ gallops are frequently heard in heart failure and are accompanied by fast heart rate.

Here is a S₃ gallop with sinus tachycardia of 110 per minute.

(sounds)

S₃ gallops produced in the right ventricle are best heard at the left lower sternal border and tend to increase with inspiration.

Now that you're learned to recognize the third heart sound, we will and the previously learned fourth heart sound, and

这样你将听到 S_4 、 S_1 、 S_2 和 S_3 ，这就是所谓“四拍节律”或“四拍奔马律”。

(声音) (心音)

现在 S_3 奔马律被去掉，你只听到收缩期前第四心音。

(声音) (心音)

再加上第三心音。

(声音) (心音)

在心室率快时，可能难区分四个心音，

现在，听心率每分钟110次的 S_3 和 S_4 两种心音。

(声音) (心音)

这心音最容易使人联想到马在奔跑的声音。

(声音) (心音)

有时在心率快时，容易把第三心音和第四心音听成是一个舒张中期的心音——所谓重叠型奔马律。

(声音) (心音)

为了获得最好效果病人取左侧卧位用钟型听诊器轻放在最大搏动点处听诊。

(声音) (心音)

thus you will hear S4, S1, S2 and S3, the so-called quadruple rhythm or gallop.

(sounds)

Now the S3 gallop is removed and you hear only the presystolic S4 sound.

(sounds)

Adding the third heart sound again.

(sounds)

It may be difficult to distinguish four discrete sounds during fast heart rate.

Listen now to both S3 and S4 gallop sounds at the heart rate of 110 per minute.

(sounds)

This is most reminiscent of the galloping of a horse.

(sounds)

Sometimes with rapid heart rate the third and fourth heart sounds are perceived as a single middiastolic sound — the so-called summation gallop.

(sounds)

For best result, use the bell of the stethoscope apply lightly at the point of maximal impulse with the patient in the left lateral position.

(sounds)

（复习心房奔马律

（心音）

左室第三心音奔马律（心音）和重叠型奔马律。

（心音）

假如你现在已熟悉正常心音和常听到的第三和第四心音，你就可以学习下一课，如有疑问回头复习心音然后再学习新内容。

另一常听见的心音是收缩期的喷射性喀喇音。

再次听大家熟悉的第一和第二心音。

（心音）

第一心音之后70毫秒有一个收缩早期喷射性喀喇音。

（心音）

这种喀喇音常由主动脉瓣或肺动脉瓣产生，但不应与S₄奔马律混淆。临床上用膜型听诊器胸件紧压胸壁上听。

又是一个收缩期喷射性喀喇音

（心音）

For review; an atrial gallop. (sounds)

A left ventricular S3 gallop. (sounds)

And the summation gallop. (sounds)

If you are now familiar with the normal heart sounds and the frequently heard third and fourth heart sounds, proceed to the next lesson. If in doubt, return to the beginning and review the sounds before proceeding further.

Another common heart sound is the systolic ejection click.

Listen again to the familiar first and second heart sounds. (sounds)

And adding an early systolic ejection click, 70 milliseconds after the first sound. (sounds)

Such clicks are frequently produced by aortic, or pulmonic valve and should not be confused with S4 gallop sounds. When at the bedside use the diaphragm of the stethoscope, press firmly against the chest wall.

Again a systolic ejection click.

(sounds)

喀喇音可能在收缩期稍后出现称为收缩中期喀喇音在心尖区易听见，

首先，听正常心音 (心音)

现在是一个收缩中期喀喇音。 (心音)

喀喇音可能是常伴有收缩中至晚期杂音。它反映有二尖瓣脱垂并二尖瓣返流。

(心音)

收缩中期喀喇音。 (心音)

伴有收缩中至晚期杂音的喀喇音。

(心音)

另外一种重要的异常的心音是二尖瓣狭窄的开瓣音，它是一个尖锐、高调音在舒张早期第二音之后40—120毫秒出现。它常伴第一心音增强。

开始，用听诊器膜型胸件在左第四肋间隙听第一心音和第二心音。

(心音)

现在听开瓣音在第二心音之后80毫秒 (心音)。