The Speech Protocol

Much of this text has described technical aspects of the videofluoroscopic examination, velopharyngeal anatomy, and the characteristics of normal and disordered speech. However, this chapter, “The Speech Protocol,” is perhaps the most crucial to the conduct of the velopharyngeal examination.

We will provide examples of speech tasks and refer to the underlying reasons for their inclusion in the x-ray examination.

However, it is important to note that the speech-language pathologist, by virtue of his training, is the professional best qualified to formulate an individualized speech protocol for every patient. It is also helpful if the speech-language pathologist can be present during the x-ray examination so that the optimal speech protocol is devised, and if necessary, revised for each patient.

A speech-protocol “menu” is included, which the speech-language pathologist can use to select and include in each patient’s x-ray protocol.

The “Ideal” Speech Protocol

Formulating the “ideal” speech protocol is difficult because of the varying needs and characteristics of individual patients.

The ideal speech protocol:

1. Incorporates speech tasks that demonstrate a patient’s best VP performance, worst VP performance, and habitual VP performance.
2. Incorporates a representative sample of different phonemes.
3. Obtains the needed information efficiently in as short a time as possible.
4. Takes into account a speaker’s age, interests, intellectual and emotional status.
5. Enables the clinician to differentiate between palatal dysfunction that is phoneme specific and that which is secondary to articulation problems, versus that which is a result of VPI.
6. Includes speech tasks of varying lengths (i.e., isolated vowel; consonant-vowel syllable; word; phrase; sentence; connected speech).
7. Demonstrates palatal timing and coordination, and the ability to accomplish transitions between nasal to non-nasal consonants (e.g., mop) and non-nasal to nasal consonants (e.g., penny).
8. Includes some standard speech tasks that enable the clinician to compare VP performance among patients.
9. Incorporates special tasks as needed: tasks that fatigue or stress the VP mechanism; barium swallow; alternative head positions; and playing of musical instrument.

Speech Tasks

A variety of speech task types are presented below.

Isolated Vowels

Many vowels produced in isolation do not require VP closure. Thus, the absence of VP closure for many vowels produced in isolation is not diagnostic of VP dysfunction.
However, we do find this isolated vowel task helpful in demonstrating that the patient is properly positioned, especially for the base view. Patients can be asked to produce isolated vowels in succession [e.g., i (eat), a (bottle), u (boot)].

Consonant-Vowel Combinations

Consonant-vowel pairs, such as “ma,” “pa,” “ka,” and consonant-vowel strings, such as “ma-ma-ma,” “pa-pa-pa,” “ka-ka-ka,” and “sa-sa-sa,” are useful in demonstrating palatal movement in uncomplicated phonetic contexts. Although dramatic palatal movement is not expected with nasal sounds (e.g., ma), they are included to insure abnormal movement is not present. Nasal-non-nasal consonant-vowel combinations (e.g., ma-pa; pa-ma) demonstrate the patient’s ability to accomplish these transitions.

Words and Phrases

Words and short phrases are particularly useful for young children or older patients who have difficulty repeating longer sentences.

Selection of these words and sentences should reflect patients’ interests and be consistent with their vocabulary.

In addition, phoneme selections should be carefully planned to uncover abnormal palatal function during the production of various phoneme classes or combinations. Examples are as follows:

- **nasals**
  - lemon jam
  - ninety-nine

- **plosives**
  - pretty puppy
  - baby bottle

- **velars**
  - cookie
  - kitty cat

- **fricatives**
  - silly Sue
  - ship shape

- **affricates**
  - chocolate chips
  - George

- **nasal–non-nasal consonant transitions**
  - technical
  - bread and butter

- **consonant transitions**
  - Michael Jackson
  - or Janet Jackson

- **glides**
  - We love yellow light

- **plosive-nasal**
  - Put the baby in the buggy*

- **velar**
  - Give Kate the cake

- **velar-nasal**
  - Kindly give Kate the cake*

- **fricative**
  - Silly Sissy sees the sky*

- **fricative-nasal**
  - Sissy sees the sun in the sky*

  - The ship goes in the shallow water*

  - Please tie the stamps with string*

- **nasals**
  - Mama made lemon jam*

- **affricates**
  - Charge the check

- **affricate-nasal**
  - Jim and Charlie chew gum*

In the rare event that patients are unwilling to repeat a specific word, a forced-choice task is useful, providing the individual is able to make a rapid decision. The patient is asked, for example:

- Which do you like better:
  - milk or meat?
  - apple pie or pepper?
  - coca-cola or chocolate candy?
  - fish or fries?
  - chili or chicken?

Sentences

Sentences, “loaded” with specific phonemes or nasal–non-nasal consonant combinations, are perhaps the most efficient means to demonstrate differential aspects of velopharyngeal function.

We have found the following sentences to be extremely useful [starred sentences were reported by McWilliams and Philips (1)]:

- **nasals**
  - Mama made lemon jam*

- **glides**
  - We love yellow light

- **plosives**
  - Pull the baby buggy

- **plosive-nasal**
  - Put the baby in the buggy*

- **velar**
  - Give Kate the cake

- **velar-nasal**
  - Kindly give Kate the cake*

- **fricative**
  - Silly Sissy sees the sky*

- **fricative-nasal**
  - Sissy sees the sun in the sky*

  - The ship goes in the shallow water*

  - Please tie the stamps with string*

- **affricates**
  - Charge the check

- **affricate-nasal**
  - Jim and Charlie chew gum*

Conversation

It is unusual for us to employ conversation in the videofluoroscopic x-ray because if the patient’s response time is slow, it could prolong the examination time and increase exposure to the x-ray. If the patient’s speech is difficult to understand, a further disadvantage is that the clinicians may not