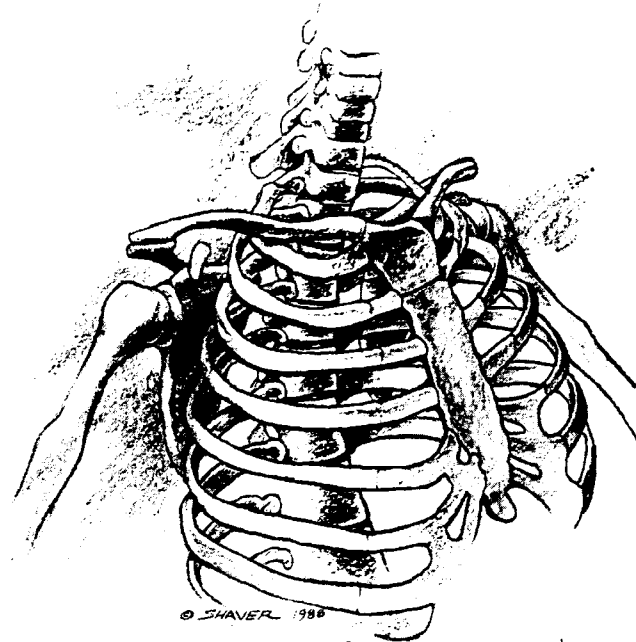


IN AND AROUND THE SHOULDER GIRDLE



with
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The same prefatory remarks made in the article on the pelvis, that preceded this one, (*Massage Therapy Journal*, Spring, 1988) apply to the discussion of the shoulder girdle. No functional region of the body can be considered without acknowledging the whole that is truly greater than the sum of its parts. That wonderful synergy that makes up a human being forms the context into which this limited viewpoint is directed.

The focus of this article will be the shoulder girdle as distinct from the underlying thoracic and cervical structures. This will include the bony elements: clavicle, scapula, humerus, radius, ulna and the skeleton of the wrist and hand.

We'll also look at some soft tissue relationships including the trapezius, levator scapulae, latissimus, pectorals, the rotator cuff, and general muscular patterns of the arms and hands.

The focus here is how to use the anatomical connections and relationships we will look at. As you understand how

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the structure under your hand lies, whatever system you practice, you cannot help but serve your client and your own creativity to better advantage.

Your client is supine and you stand at the side of the table, client's head to your right. Place your hands on the sides of the rib cage, thumbs along the costal arch, fingers open and headward.

Under your hands and deep to the skin, you have a blending of sheets of connective tissue with fibers of the abdominal fascia meeting those of the pectoral fascia from above in a continuum of a dense but thin layer. The distinction of pec from abdominal fascia is purely academic, as in vivo this web is truly sort of a body stocking in concert with the skin, continuous from head to foot. Because this layer is also firmly attached to the structures below it, pressure into this layer has broad-reaching effects.

The fibers under your hand lead

upward to the pectoral muscles, where they are continuous both under the costal attachments of the pectoralis major and over it. The fascia then invests the pectoral at its inferior border and wraps around it all the way up until it is continuous with its tendon at the attachment on the humerus. This inferior border is an area where a lot of kinetic energy flows as the arm "work" (in the physics sense) is transmitted across the thorax to the ground, or to the pelvis if the person is sitting. Working along this line will ease the whole pectoral and effects will also go deep into the shoulder under the deltoids.

Moving medially and upward along both sides of the sternum, the fascia is tough and thin over the bone. Laterally are the sternal fibers of the pectoralis major. Systematic work onto the ribs and intercostal spaces close to the sternum will have effects under the pecs along the rib cage and over the surface superiorly into the shoulder.

Continuing upward to the clavicle and working from medial to lateral we find several layers here. Under the skin lies the platysma which is a thin sheet of fascia with contractile fibers embedded in its matrix. Although it is technically a muscle, the platysma acts



Fig. 1. The pectoral fascia is continuous over the sternum—move laterally.

like an aponeurosis, its inferior attachment is across the clavicle and into the pectoral fascia and the fascia covering the anterior fibers of the deltoid. Superiorly the platysma attaches into the inferior border of the mandible and skin of the cheek. In this way the platysma is involved in expressions of the mouth and cheek.



Fig. 2. The pectorals have attachments on inferior portion of clavicle.

Working along the clavicle lightly and superficially will spread release upward toward the face. Deeper strokes along the inferior edge of the clavicle will get into fibers of the pectoralis major which has attachments all along

the clavicle. This will spread release laterally into the shoulder and upper arm, as well as easing the underlying upper ribs.

It is also productive to work at the "intersection" where the pectoralis ducks under the anterior edge of the deltoid. Here the costal, sternal and clavicular aspects of the pectoral come together on their collective way to the humerus of the upper arm.



Fig. 3. The pectoral dives under the deltoid here; an important junction.

Now, move so you are standing at the corner of the table, client still supine, looking forward. The deltoid muscle is divided into three parts: the anterior, attaching superiorly along the lateral third of the clavicle, the medial, attaching superiorly across the top of the acromio-clavicular joint, and posterior, attaching superiorly all along the spine of the scapula.

Collectively, these parts of the deltoid cover the top of the shoulder joint and descend to attach into the lateral aspect of the humerus. Work along the superior edges at clavicle, acromio-clavicular, and scapular spine attachments will generally release headward and help to open the build-up between the arm and the neck, a common place for people to accumulate tension. Following the anterior and posterior borders of the deltoid armward to their attachments will help release the arm from the shoulder joint. At this point, it is appropriate to work down the arm, although you may elect to turn the client over and work on the dorsal aspects of the shoulder girdle before

doing the arm.

The arms are a world unto themselves, and a book could be written covering structure and function here. Since my intention is to show how the general anatomical arrangement suggests coherent ways to work on these areas, the treatment of any area is not meant to be comprehensive.

Place the arm in the classic "anatomical position" with the palm anterior and the elbow pointing into the table. The surface of the arm you now have facing anterior is that of the flexors. Consider that the most fundamental function of the arm and hand is to bring food toward the mouth. As this gesture is made, most of the flexors of this anterior surface of the arm are brought into play. Also note that the pectoralis major and anterior deltoid assist in flexing the upper arm on the trunk in this gesture.

The principal idea in working on the arms, then, is to ease the flexor surface. Generally, this is where arm tension accumulates as this is the primary action of the limb. Note that at the superior end the deltoid and pectoral muscles cover the biceps as it goes under them on its way to its superior attachments deep in the shoulder. Major ease, however, is gotten for the biceps at its distal attachment below the elbow on the inner aspect of the radius. The biceps do not participate primarily in shoulder movement, but actively participate in flexing the lower arm on the upper.



Fig. 4. The proximal forearm, flexor surface, between pronators and supinators.

Before moving inferiorly, note that at the elbow, crossing from below to above, are the supinator and pronator muscles of the forearm. These turn it around its long axis on the upper arm. These muscles are critical in orienting the hand, and work here will help relieve tension all the way to the wrist on the flexor surface. This area is usually involved in dysfunctions at the elbow. Note that this surface of the arm has the flexors of the hand in two tiers, those that flex the wrist are more superficial and cross the elbow to insert on the condyles of the humerus. The deeper layer lies on the anterior surface of the radius and crosses the wrist to flex fingers on the palm. Since so much of our consciousness is invested in the hand, this is an area of major importance. Work on the flexor surface of the forearm lets go of attitudes as well as gross structural tension. The work should continue out to the palm which is soothing and relaxing, but not particularly accessible structurally due to its tendinous nature. One exception to this is the thumb, particularly the thenar eminence, which participates in grasping and holding against the fingers. Pressing into this mound has deep effects to the whole hand and aids in releasing the forearm through some of the flexors and extensors of the thumb as they cross the wrist to insert in the lower third of the forearm.

While the dorsal or extensor surface of the arm is not to be ignored, experience has shown that to the extent the flexors are relaxed, the extensors are usually able to do their job without much intervention.

Now, have the client turn over to the prone position and we will take a tour of the dorsal aspect of the shoulder girdle.

Starting from below, the latissimus dorsi is a broad sheet, blending inferiorly with the lumbar fascia and attached to the midline by a fascial aponeurosis which is also part of the lumbar fascia. The fibers of the latissimus run diagonally upward, blending toward a common attachment along the proximal part of the humerus. Working in the spinal groove from the mid-lumbar to around T8, will affect the whole latissimus and spread release laterally toward the back of the shoulder. Like the pectoral on the anterior surface, the latissimus runs deep to the deltoid on its way to attach on the humerus. It is an important junction and work here will spread

deep into the shoulder as well as medially back toward the spine.



Fig. 5. Inferior trapezius attachments with latissimas underneath make this area critical.

Note that at the superior border of the latissimus, it is overlaid by the inferior attachments of the trapezius. This double layer typically runs from T-12 inferiorly to about T-7 or 8 superiorly. This is an area where much of the arm-loading bears on the spine and many people accumulate tension here from overwork of the arms or inappropriate posture involving shoulders, arms, or underlying rib patterns.

Working into the spinal groove specifically here will strongly affect shoulder tension, particularly laterally across the shoulder blades.

Moving more superiorly to the area between the scapulae, the most superficial layer is the trapezius. It attaches medially via tendinous aponeurosis and laterally to the superior border of the scapular spine with some fibers reflected anteriorly to the distal end of the clavicle. There is a well-defined anterior border along the top of the shoulder leading upward across the neck to find attachments blending with fascia of the cranium along the occiput.

Key points for working with the trapezius are all along the spinal groove, along the superior margin of the scapular spine, and along the anterior border from the acromion to the occiput. Special attention to the occipital area will ease both the underlying suboccipital cervical structures and the fascia covering the scalp.



Fig. 6. From medial to lateral along both sides of scapular spine.

Note that between the scapular spine and its medial border lie the rhomboids. They are important in relating the scapulae to the spine and underlying rib cage and are often involved in postural fixations in the shoulder girdle. Just superior to the rhomboids are the levator scapulae which run from the supero-medial angle of the scapulae into the transverse processes of the cervical vertebrae. Functionally, the levator and upper rhomboids share



Fig. 7. Stretching here will spread toward the spine, medially, under the scapula, laterally, and cephalad along the levator scapulae and its fascial plane.

some innervation and act in concert across part of the range-of-motion.

To complete this tour of the shoulder girdle, place the client on his/her side with the knees drawn up to 90° for stability. This coronal view allows access to the lateral border of the latissimus as it traverses the rib cage from the lumbar fascia to the arm. Work along this border will ease in both directions. This is a major area of tension as much arm effort travels along here onto the trunk and pelvis.

Also on this coronal surface, find the serratus anterior which has attachments into the rib cage laterally, along the coronal plane, from ribs 1-8. The medial aspect of the serratus goes under the scapula to attach along the medial border of its deep surface. The rhomboids and serrati work in concert to stabilize the scapulae against arm movement of the gleno-humeral joint.

The final area to cover in this overview of the shoulder girdle is the scapula, whose musculo-fascial structures run laterally to the humerus across the gleno-humeral joint. Many of these structures come together to form a tough sleeve around the joint called the rotator cuff. It is beyond the scope of this article to go into anatomical detail here, but note that work along the lateral border of the scapula affects structures that cross to the area under the deltoid. The work on the trapezius and rhomboids will have effects across the dorsum of the scapula as these areas share common connective tissues in their attachments on the scapula.

The area of the lateral border of the



Fig. 8. The lateral border of the latissimus runs from back of axilla to lumbar fascia.

scapula, where the teres and latissimus cross under the posterior deltoid, is very important to deep release in the shoulder. This is a junction where much postural tension is lodged. Overwork of the arms will also thicken and tighten this region. I usually work in this area (with the client on his/her side) along with the serratus and lateral border of the latissimus. It is helpful to have the client extend the arm to the front to open this junction while you work on it. This position also lends itself to work on the anterior border of the trapezius all the way up to the occiput.

The elements of structure and technique outlined in this article may be used in various combinations to re-



Fig. 9. The back of the axilla and lateral border of the scapula are multi-layered and pressure here spreads radially.

spond to specific patterns of tension or posture in your clients. The main point is that a *working* understanding of the structures (and functions expressed by those structures) under your hands will make your intervention more coherent and relevant to your client, and ultimately more interesting and challenging to you as you work. ■

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