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Not Just the Thoracic Duct: A New Understanding of Lymphatic Routing

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ABSTRACT

Introduction: To augment observations regarding alternative drainage of the lymphatic system.

The problem: Current belief is that the routing of lymphatic drainage is only to the thoracic duct. The author through her work in massage questioned this. Her unique methodologies, Neurostructural Balancing Massage and Accelerated Lymphatic Drainage Massage are detailed. Terms which are new and now relevant, including lymphatic channels, are defined. Unexpected benefits to the heart and to weight loss from combining her two types of massage are shared from a prior long term study. The observation of frequent urination in multiple clients with deeper lymphatic stimulation led her to believe in another route. A case study illustrating this is presented within this paper. Mascagni's [1] Table XIII provided the detail confirming the routing both to urine and semen. Her successful work in helping clients with sinus difficulties (allergies, colds) lead her to first examine the content of nasal discharge. Noting the presence of leukocytes lead her to examine multiple bodily fluids. Given the presence of leukocytes in all of these confirmed there are other routes not defined or recognized. The presence of leukocytes also indicated a probable connection between the lymphatic system and management of hydration throughout the body. Noting parallels between lymphatic channels and Chinese meridians, she has partnered with an expert in Chinese medicine and is currently working to see if Chinese meridians can provide further clues as to the exact routing within the lymphatic system.

Methods: Observation, case work, data accumulation including recent and historic data.**Results:** Clearly shows the routing of the lymphatic system to be varied throughout the body, apparently connected to hydration throughout the body, and to be at the root of much of Acupuncture.**Conclusion:** There is no doubt the current belief that all lymph drains into the thoracic duct simply is not true, and limits progression in scientific understanding. Much of the work done by the author should be further researched.

Keywords

Lymphatic System, Cancer, Autoimmune Disorders, Massage, Chinese Meridians, Acupuncture, Leukocytes, Hydration, Mascagni, Pharmaceuticals, Traumatic Brain Injury, Post-Surgical Recovery, Structural Balance, Cardiology, Oncology, Vodder.

Introduction

The author is not a medical professional, researcher, or a graduate student. She has been doing massage for almost 19 years, and initially developed a massage technique primarily focused on the muscles and structure, which she labeled Neurostructural Balancing Massage. Neurostructural Balancing Massage focuses

overall on assisting the body to returning to structural homeostasis; it is more of an engineering approach. Generally, the direction taken in doing this work for clients is to first target areas where the body is experiencing the most pain. However, it also means the core of the imbalance should be addressed for lasting relief. This work is intense, and utilizes stimulation of nerves to release muscles. It can leave bruises but generally the pain of the pressure is over very quickly (less than a second). The author has learned if there is an emotional component to pain held by the client, the reaction can last longer. Muscles which are too taut can cause nerve pain. They unbalance bone structure and can potentially affect many systems, including lymphatic flow, nerves, and the ability to

oxygenate. There were no applications involving lymphatics with this work. Restoring the structure to homeostasis is at the basis of this approach.

To put this into simple terms: What controls the structural balance of the body? The answer is bones, muscles, cartilage, adipose, lymphatic and interstitial fluid.

The author spent almost 19 years observing how working with the muscles reduces pain. The mechanics are fairly simple. They involve releasing taut muscles with intense pressure, then stretching to help restore the positions of bones. If the vessel is bent out of shape, nothing flows well. This includes nerves, blood flow, lymphatic flow, oxygenation, and the ability of organs to function optimally.

A major area of the author's positional focus is on the balance of the coxal bones. The fulcrum of the body is in the hips. The larger the muscle, the greater is its ability to unbalance the body. The overuse of one side of the body over the other will inevitably register as more weight is placed on one leg than the other. Most people, forsaking injuries, will tend to be shorter on the left side. And most people, once the imbalance is in place, will tend to continue to place more weight on the left side than the right. This can be observed in a group of people standing in line - most clearly lean to one side. This tends to generally tighten the muscles on the posterior side of the left thigh more than the right, and since the right leg is now at an angle, the right calf is going to be positioned in a way guaranteed to cause imbalanced stress on it as well. Stress occurs on the knees. This continues into the feet. The level of the bottom of the foot will vary based on the tightness of muscles on either side of the ankles, sometimes continuing into the thigh. The spine begins to compensate, changing the balance of the shoulders, and the brain demands it remain level to gravity, so shoulders and neck are out of position. Shoulders, displaced, continue the muscles tightening into angles for which they are not designed. The positioning of the ribs also can be affected, causing less than optimal oxygenation to the blood. The scapula and other bones may distend or displace as lymphatic/interstitial fluid collects in response to the imbalance. Repetitive motion generally imbalances muscles. This can continue or originate in the forearms, wrists and hands. Collection of blocked lymphatic fluid gathering around the neck and pressuring against the brain stem can cause headaches.

Broken bones can add to the imbalance. In the author's case, a steel shaft inserted and later removed caused the healing which occurred to never be in optimal balance, since the bones are now artificially incorrectly angled. Surgeries can alter muscle and bone balance. Knee replacements and hip replacements should ideally also take into consideration the balance of the body. In an ideal world, correction of the problem which is the root cause would be likely to lessen the need for such surgeries. Heavy lifting or weights used to build muscle mass can further compress the curve of the spine and displace organs. Rectus abdominus, used often in lifting anything of weight, can tighten to the point where there is not sufficient room in the abdominal cavity because of compression

of the spine. Many gym aficionados develop a stomach over time that sit ups won't help; they actually compound the problem. Often the agony of low back pain originates from the coxal bone tilting forward, resulting in pressure on nerves positioned in the low back. Prevalence of laptops in the world or weights in the gym can also pull the shoulders forward. Vertebrae struggle to stay in place and many start to tilt in different directions, causing issues with the placement of the ribs, affecting the lungs. Arms distended either too forward or too far back cause muscles to become stressed at angles for which they were not designed. Joints trying to absorb the stress can destroy cartilage. Tendons, in extreme cases, can tear off the bone. The author hypothesizes that the primary purpose of pain and swelling not originating from infection is to slow down overuse, or imbalanced use, of muscles. If overuse continues and the muscle structure is not torn, it is likely that restricted range of motion, gout or arthritis will begin as lymphatic/interstitial fluid overwhelms the area. The continued constriction of the lymphatic system can lead to ineffective clearing of the blood. This may be at the root of heart attacks in runners.

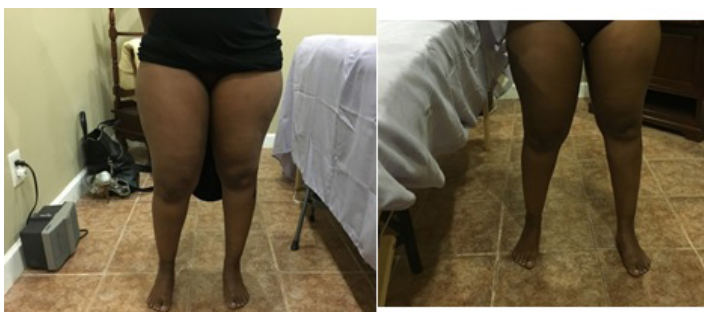
It is the author's opinion that it is better to release the muscles, letting the bones return to balance, than to attempt to alter the bones, expecting the muscles to follow, as taut muscles will continue to pull bones out of position. Ignoring the patterns of behavior which led to the imbalances insures their return. Because many physicians tend to rely on a belief that all exercise is good, they advocate exercise with little consideration of how that exercise is impacting the body. Conversely, the author specifically encourages swimming, and sometimes discourages other forms exercise until balance is restored. Tendons can be relieved of pressure by doing this type of massage on the muscles attaching to the tendon. This work by itself has been beneficial in multiple applications, including cerebral palsy, multiple sclerosis, lateral epicondylitis and neuropathy. The author postulates that restoring structural homeostasis is of benefit to organs, bones, blood, the central nervous system, and cartilage as well, simply by removing pressure where it causes complications. In every case she observed of medical intervention with the knee or complaints of knee pain, the vastus lateralis was extremely taut.

The author's first exposure to the lymphatic system was while studying to be a massage therapist. She was taught classic Vodder. She went on to become state and nationally certified as an instructor and to teach the same system. Her specific work with the deeper lymphatic system required her to recognize that the rules from classical systems no longer applied. To achieve maximum results, she needed to incorporate elements of Neurostructural Balancing Massage into the work while stimulating the deeper lymphatics; stimulation of the deeper lymphatics can occur without focusing on structure or muscles, but release is not as effective. Conversely, Neurostructural Balancing Massage became far easier when pressure was released from the lymphatic system. A simple way to explain why structure is an inherent issue for lymphatic drainage is to use the idea of a trailer home, tossed by a tornado; one does not fix the plumbing before straightening the body of the trailer.

The methodology to work with the deeper lymphatic system needed to be differentiated from classic lymphatic work, and it is certainly accelerated in its results, so it was recently renamed Accelerated Lymphatic Drainage Massage, after being disguised as to its driving mechanism for some time as Angel Recovery Massage. To illustrate how it differs from all other conventionally surface lymphatic work, the following case study is presented:



May 12, 2016, front of legs, beginning and end.



May 17, 2016, front of legs, beginning and end.



May 12, 2016 Back Beginning and End



May 17, 2016 Back Beginning and End

Differences in picture heights are due to client request to crop portions. No other editing was done.

Accelerated Lymphatic Drainage Massage is focused specifically upon stimulating the lymphatic paths that should be flowing, but are not. It is not bound by the typical routing of conventional lymphatic drainage; it works at a much deeper level. And it may well cause harm if executed improperly. The author did not identify the methodology for quite some time due to these concerns, because she felt protecting the method was more important than quick financial gain by teaching or publicizing the work. She observed that in working with cerebral palsy clearing the area around the thyroid served to assist in the retention of flexibility in muscles. However, to announce that meant that any frustrated parent could cause damage to a child attempting to emulate her. There was also a substantial fear that untrained massage therapists, focused more on greed or ego, would do the same.

Accelerated Lymphatic Drainage Massage is not bound by typical lymphatic routing, but certain routes and certain orders should be followed. Failure to do so can cause pain, and may even be damaging. In every possible case, the author has applied methods first to herself, then to others. When teaching she requires work be done on her over time so as to stop anyone from causing harm until they fully understand what they are doing. The case study detailed in this presentation was followed by trying to assess at maximum intensity what results would follow. Several tests afterwards were done regionally throughout her body. At one point in other testing, following a major clearing in the upper body, the author noted what felt like uneven blood flow around the heart. She identified a lymphatic channel she had not previously used, and felt the sensation disappear. To bring these methodologies into the light, however, is necessary for the benefits they can bring, and required for further study.

The author wishes to introduce four new terms:

Lymph entrapment

This is a better way of expressing blockages.

Lymph channels

These are directions of lymphatic flow accessible from the surface and are typically 1 to 3 inches in depth.

Lymph congestion

This is an area which is filled with lymphatic fluid/interstitial fluid to the point where it is more pronounced than most of the surrounding area. Most people have lymph congestion around their neck and shoulders.

Lymph clusters

There are areas within the body clearly holding a considerable amount of lymphatic nodes; it appears likely that routing and volume balancing is being done within these areas. Some things are better shown in pictures, and Mascagni [1] is still the best source. Below is a close up from his book showing what the author perceives as a lymph cluster:



Accelerated Lymphatic Drainage Massage was first studied for weight loss. The author was cognizant of constant corollaries between taut muscles and lymph entrapment. She further detected that lymph nodes and channels expand with fat. Observing the fat trail in cadavers allowed better understanding of lymphatic channels. While targeting weight loss, the author worked with an older female from January to November 2012. During that time, the client reported a 38 pound weight loss, but also reported a host of other medical benefits, including her doctor lowering, and then removing blood pressure medicines. Her doctor also ordered stopping Warfarin after her 10 years of taking it. She was removed from Lasix for fluid retention approximately 2 months into the study. There was no fluid accumulation around the heart. She had heart ejection fraction improvement. Tests from previous years showed continued deterioration of percentage of blood outflow pressure. A test in October 2012 showed no further deterioration had occurred in the past 18 months. She was slated to start Metformin for blood sugar but two months of metered testing and readings showed no need; all readings were at or below normal. Blood tests showed her cholesterol within normal range. Her heart valves were leaky, and had deteriorated over the past several years. There were indications surgery would eventually be needed. A test showed regurgitation has slowed to mild, and nothing needs to be done at the time of that test. This showed actual improvement. One other point of interest is that the client was absent a kidney because of donation. The author expected to find lymph congestion in the back above the missing kidney. That was not the case, but there was lymph congestion above the working kidney.

What are some causes of lymph entrapment? All of these can also increase lymphatic congestion:

- Taut muscles
- Medications
- Cortisol (Stress!)
- Physical trauma to the body, including surgery
- Positional stagnation – areas of the body are not moving as

designed. One example of this is that we no longer scramble up hills, or pick fruit, or climb trees – our arms are not over our heads as they once were.

- Types of food or alcohol that are specific irritants to the individual.
- Inadequate water intake – clients who consume water with regularity showed superior clearing of lymphatic blocks.
- Medical conditions
- Airline travel; swollen ankles are extremely common
- Viruses, bacteria and parasites

The author noted swelling in her ankles following a round trip to Peru. After a few days of some virulent diarrhea all the ankle swelling had subsided (lymphatic rerouting to manage fluids?).

On the subject of fluids, one reason for the author discounting the position that all lymph drains to the lymphatic duct began in observing client after client with the same outcomes. Urination before, and after, sometimes during the bodywork were very common. Often mentioned were changes in stool the following day as well as changes in food cravings. It simply did not make sense that the lymph could move that quickly to the thoracic duct and then to the kidneys.

Dr. Valeska Wells of Houston was the doctor with whom the author shared the picture from Bayle [2] which was sourced from Mascagni [1], illustrating the route of lymph between both the kidneys and the testicles. Understanding the author's commitment to better developing her work, Dr. Wells was kind enough to allow the author repeated use of her INBODY equipment. After working with the equipment many questions were directed to the manufacturer via email. The problem with INBODY is that it estimates too many variables to insure accuracy in its output. It does, however, correctly measure weight, and some trends can be noted, but in the author's opinion, too much input data is estimated. This can severely skew the results, and many of the results claimed cannot be accurate, but are useful for identifying trends. The author was using herself for the testing. Assuming that the female average leg length is 45% of the height in INBODY's computations, her legs measured 53% of her total height. Shoulder width would create variables as well. Upon inquiring as to whether she could obtain the formulas to adjust the results, she was advised that the formulas were proprietary and only known to two people at the company.

Time variables between tests and the massages were because of driving between the location of the massage and the location of the INBODY equipment, along with wait time for its access.

On 1/13/2019, preceding this test, much work was done by a former student of the author trained in deep muscle releases. No work was done to target the lymphatic system. A baseline reading was taken at 12:02 p.m. 1/17/2019. Less than 4 ounces of water was consumed from start to finish.

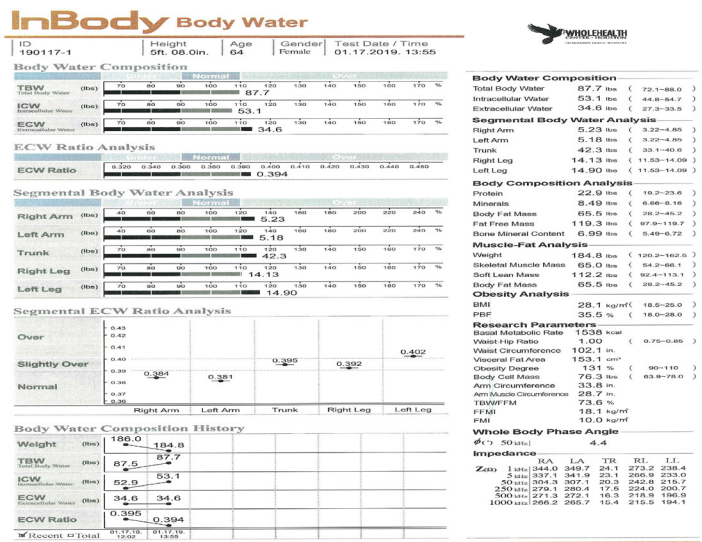
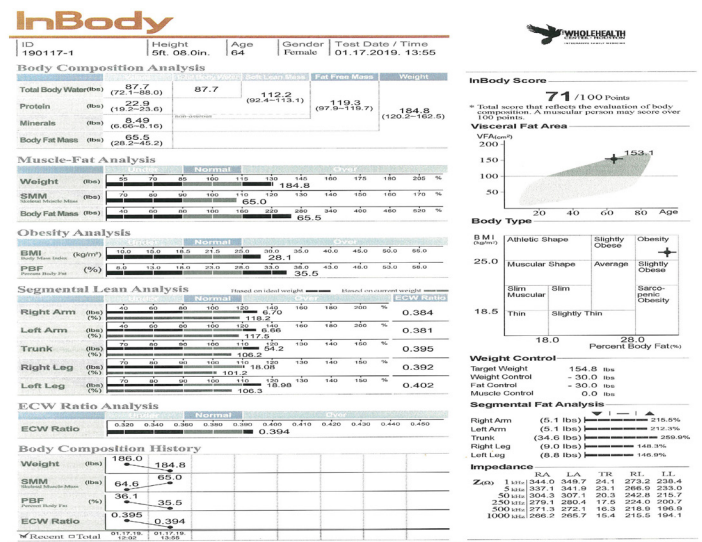
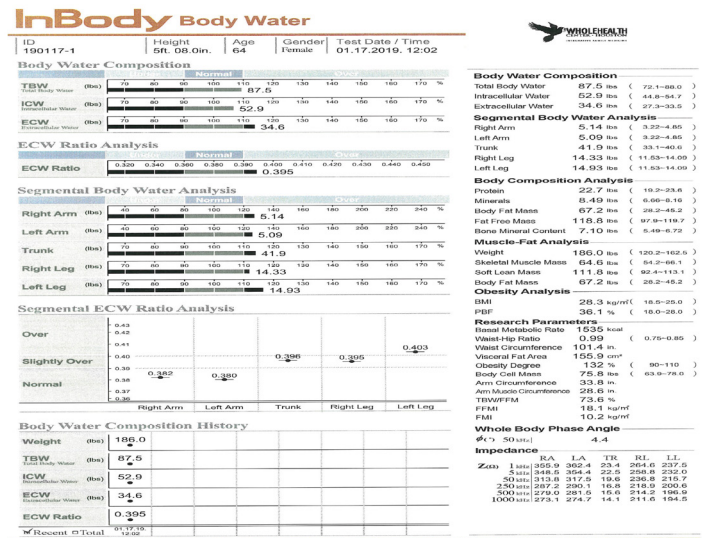
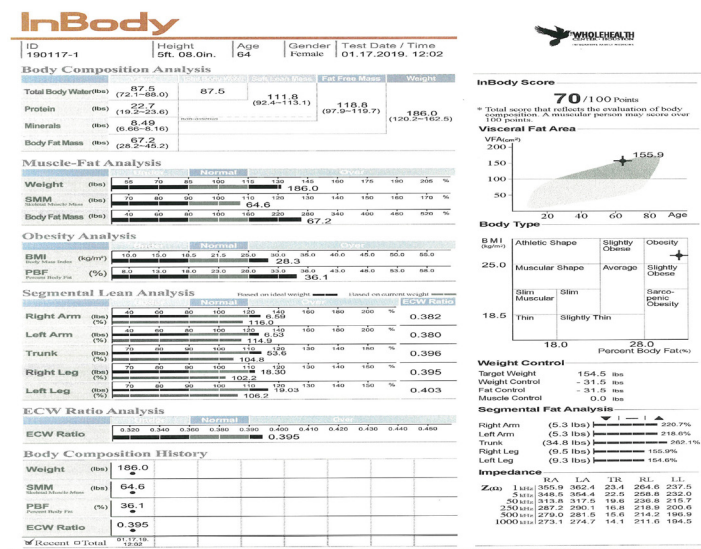
Massage followed that focused on the left leg, left hip and abdomen

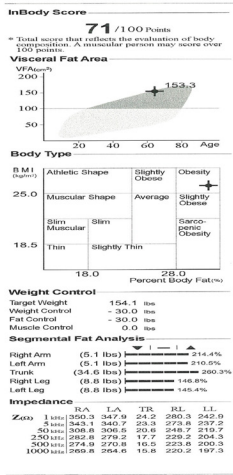
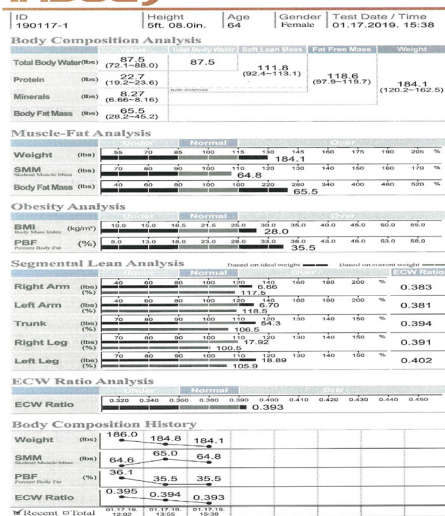
only. Thirty minutes into massage, the author stopped to urinate, and also at the end of massage. Heavy output was noted both times. The most peculiar result and the one which supports the perspiration/lymphatic system connection was that after working for some time the perspiration was coming JUST from the lower abdomen, below the waist. The author does not usually perspire there, even when working in high heat. The left leg has sustained far more damage than the right (broken tibia, fibula, repeatedly damaged knee), so was chosen first, and considerably more work was done on the left leg.

The second reading taken at 1:55 p.m. 1/17/2019 – shows a number of things, but already overall weight is 1.2 pounds less. According to INBODY left leg weight change went from 9.3 to 8.8. Both arms were physically active (working!) and both registered a .2 pound weight drop. See INBODY data which follows for other changes. At the end of the first session the author felt completely off balance - noted in her gait, particularly. The gluteal region was very visibly pronounced on the right side (unworked) compared to the left.

The next massage, from 2:05 p.m. to 3:10 p.m., the author also urinated 30 minutes in and at end. She worked the right leg trying to make it similar to the left, but much more time on the abdomen and hip. There was frustration because of being unable to completely clear the back of the leg (out of the author's reach).

The third reading was taken at 3:38 p.m. 1/17/2019. Total weight drop is now 1.9 pounds since start. Overall, according to INBODY, the right leg has dropped from baseline from 9.5 to 8.8 pounds, left leg from 9.3 to 8.8. Data from the INBODY follows:





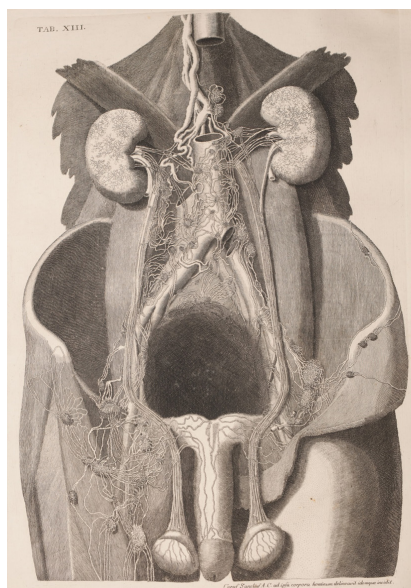
The trace amounts of leukocytes in the urine further supported the author's position [3]. Having noted the sinus/lymph connection in her work, the author then proceeded to look at the components of nasal discharge, which also contained leukocytes [4]. She found the same to be true for saliva [5], tears [6], perspiration [7], cervical mucus [8], and semen [9]. Her belief is that the lymphatic system is responsible for managing hydration throughout the body. After obtaining a complete set of Mascagni's illustrations [1], the author observed a strong parallel between lymphatic channels and Chinese meridians. Theorizing there must be information to help better determine existing lymphatic routing; she recruited Bing You, M.D. (China) L. Ac., DAAPM. You is currently working with the author on detailing suspected routing based on Chinese medicine for her upcoming book, which will also include all of Mascagni's illustrations [1]. Further communication and experiences between the two strengthened the author's position. She realized the needles would be perceived by the lymphatic system as an invader, prompting the movement of white blood cells. From her experience, cupping is especially effective for lymphatic congestion. She also believes that the lymphatic system is the root of Chinese medicine, and that much about lymphatic routing can be learned by combining the knowledge of the East with the West. An improved understanding of the lymphatic system will have a profound effect in a multitude of medical and pharmaceutical applications.

Some possibilities include determining alternative pathways for applications to better target pharmaceuticals; studying the effects lymphatic entrapment causes in the efficacy of medical treatments, such as chemotherapy; determining the roles of lymphatic blockages in cancer; assessing the same impacts in autoimmune disorders; assessing reduction of swelling to assist healing - such as traumatic brain injury; and examining the potential for improved post-surgical recovery caused with cleared lymphatic channels.

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Mascagni's Table XIII, presented below, clearly shows the routing of lymph both for urine and semen.



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