

pressure and then you can access the internal carotid using an aneurism hook. At this point you'll notice the artery is double the size of the stub that we normally clamp off. We were able to use a 1/8 inch arterial tube, injecting downward from the calvarium. You don't want to place the tube in too deep, 1/2 inch is good, before clamping and tying off. If we insert the tube too deep, it will bypass some of the tributaries that reach the face. While slowly injecting the right side of the head, I began putting digital pressure on the left side of the face, including the eye and cheek. The left side was no longer fragile, the waterless embalming made it ideal to begin decreasing the swelling. I opened the eyelid and applied pressure directly on the eye ball for about a minute and it stayed reduced and returned to its normal size. The Edemaco kicks up the firming speed while the entire solution preserves and shrinks the edematous face. The inside of the calvarium was no longer pink or red with moisture. While the solution was drying internally, the Dryene pack was cauterizing the leaky autopsy incision.

The right side absorbed almost one quart of the strong waterless solution. It actually swelled up some but the tissue was very evenly saturated. Pressure was applied to the temples, eyes, and cheeks. The reduction was happening in real time. It was about 5 p.m. now and the family was coming in at 6 to decide if they were going to have a viewing.

The entire face, neck, and head were swollen from being on life support for three days before death. We put Inr-Seel in the foramen and used it to fill the cut bone of the calvarium after attaching it with a screw skull clamp. I don't think it matters what method you secure the calvarium with as long as it's well secured without any motion. The autopsy was still open so we took advantage to channel the swollen neck using a baby trocar. After channeling, large cotton strips were placed in the neck, and immediate reduction was noticed. I placed a water collar around the neck up high, right below the jaw line. The cotton strips acted as wicks and with increased action due to the pressure of the water collar.

The facial tissue was reacting like we wanted it to, that is, it was firming, drying, and being reduced. We began drying the neck with Basic Dryene and used the super gel to brush on any tissue that was in doubt of being preserved. We brushed this super gel solution on the sidewalls and any raw tissue too thin to access with a hypo trocar. We did hypodermically inject the legs, buttocks, and sidewalls with an Introfiant and Metaflow solution. This mix penetrates evenly into tissue instead of fluid only being injected that has a tendency to be so

strong it walls itself off and the result can be gaps between trocar paths that can begin decomposition. All moist tissue was brushed with the super gel and then shrink wrapped. The case was now made leak-proof and odorless with the wrap. The body was placed in a unionall and we added some Viscerock Plus inside, to soak up any moisture and to also add additional preservative. We now had a well embalmed, leak-proof body, even though we had to kick it up a notch and re-inject the body with a drying solution.

The brother-in-law of the deceased came in at 6 p.m. and we finished suturing and did a final bathing and shampooing of the body. We placed a sheet over him and wheeled him out to a small cosmetic room adjacent to the prep room. He didn't take much time deciding he would suggest an open casket to the family. He thanked us all. He had seen the deceased at the hospital and didn't think anything could be done to make him viewable. The funeral director told him the full story about how I stopped over and he was very grateful.

It was a good effort but it probably wasn't going to happen under normal circumstances at the funeral home. I believe they are now into kicking it up a notch even to the point of a re-injection. By the time they realized the full condition of the body, the arterial injection had been completed. It is never too late to improve the situation and sometimes save the case and provide good service to be able to serve the family in the future.



Jack is Dodge's busiest embalming educator and lecturer. Along with working for Dodge as a sales representative in northern Illinois, he is an Embalming Lab Instructor at Worsham College.
Jack Adams, CFSP, MBIE

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The Dodge Company
9 Progress Road
Billerica, MA 01821-5731
Phone: 1-978-600-2099
For Orders: 1-800-443-6343
Fax: 1-978-600-2333/
1-800-443-4034

The Dodge Company (Canada)
1265 Fewster Drive, Mississauga
Ontario, L4W 1A2
Phone: 1-905-625-0311
For Orders: 1-800-263-0862
Fax: 1-905-624-1109

The Dodge Company
Unit 15 Ardglan Industrial Estate
Whitchurch Hampshire RG287BB
United Kingdom
Phone: (011-44) 1256-893883
Fax: (011-44) 1256-893868



Website: www.dodgeco.com
Web Store: shop.dodgeco.com
E-mail: dodgemag@dodgeco.com

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Kick It Up a Notch

by Jack Adams, CFSP, MBIE

I was visiting one of the firms in my territory and found out they had a case they had embalmed earlier in the day but there was concern about leakage. This was a relatively new funeral home whose embalmers had a mix of experience, from many years to first year. They asked if I'd take a look and see what I thought about the case. The owner was concerned and I could see why.

The case was a Hispanic male who weighed about 190 pounds normally. He was in an auto accident and had been kept alive for about three days on life support. The IV injections made the tissues hold more fluid and he looked like he might weigh 250 pounds. They had performed a complete autopsy on him and he was leaking from some pores, even on the face. The cranial incision was actively leaking and there were signs of pitting edema and swelling in the face and throughout the body. Of course, all the noticeable swelling was on the face and hands. They were not used to embalming with strong solutions and hadn't seen what happens to such cases after the medical miracle attempts have failed.

I told them that they should be concerned and asked when the visitation was scheduled to start. They said the family wasn't expecting a viewing but would really like to say their goodbyes. It was about 2 p.m. and the cousin was scheduled for a 6 p.m. visit. I told them that if they wanted a chance at

viewing, they'd need to re-inject the body and try to reduce the swelling. They didn't have the right stuff to do the job so I called our local warehouse and had them put together an emergency order of Introfiant, Edemaco, Basic Dryene, and SynGel HV.

The inner pressure from the edema was pushing fluid out the incision area. There was no way this tissue would dry for a viewing tomorrow.

One embalmer went to pick up the good stuff while the young embalmer and I opened up the head and trunk to survey the tissue condition. The embalming had been done about four hours earlier that day. The cranial incision was leaking large amounts of slightly pink colored fluid. The inner pressure from the edema was pushing fluid out the incision area. The face and eyes were swollen, caused by excess fluid in the tissue. Fluid was leaking from some of the facial pores. There was no way this

tissue would dry for a viewing tomorrow.

We removed the calvarium and found the floor of the skull full of fluid. There was a powdered drying product in the cranial cavity that was covered with fluid. We removed and discarded a balled up piece of cotton saturated in body fluids. We did have 4 oz. of Basic Dryene that we used to begin treating the inner cranial tissue. I began wiping up all the fluid in the head and on the tissue while the young embalmer began opening up the chest. There was fluid leaking from the corners of the mouth and nose. This minor purge action suggested fluid in the abdomen and perhaps gas buildup. The sternum was removed and, sure enough, the chest cavity was filling up with body fluid and chemical. This reminded me of an edematous autopsied case we treated years ago. Back then, we had time so we left a dry cavity open overnight and when we returned the following day, it was not only filled with fluid, it was overflowing. The edema found all the open incised tissue and made its way out through the path of least resistance.

This case was slightly different. Body fluid and cavity fluid leaking from the viscera bag were filling up the cavity. We removed the viscera bag, aspirated the cavity, and absorbed all the excess fluid with large cotton swabs. A quick review of the tissue showed wet, unembalmed tissue that was certainly leaking but could also go bad soon. Letting it go and doing nothing wasn't an option. It would be a Russian roulette kind of move.

We mixed a hypodermic solution in the embalming

machine consisting of 16 oz. of Introfiant, 16 oz. of Permaglo 35, and 16 oz. of Permaflow V-2.

There wasn't anything else left on the shelf. The supply pickings were getting mighty slim. We hypoed the sidewalls of the autopsy and any tissue wide enough to hold the hypo trocar diameter. We raised the axillary arteries and found the carotids. The right carotid was damaged. Then I heard a car pull into the garage. The cavalry had arrived with the needed chemical ammunition.

The supplies that now arrived included Introfiant, Permaglo 35, Edemaco, Feature Builder Firming, Inr-Tone Latin dye, Basic Dryene, SynGel HV, and a jug of V-P (Viscerock Plus). Basic Dryene and SynGel HV are the two ingredients when mixed together make what I call a super gel (mix equal parts together to maintain a gel consistency). This super gel can be brushed on poorly embalmed moist tissue to preserve and cauterize.

We needed to re-inject what we could using a waterless solution designed to penetrate and saturate this delicate tissue. We started by placing thin layers of cotton saturated with Basic Dryene over all the raw tissue of the open calvarium. We also placed a Dryene pack over the thin muscular tissue of the calvarium and the removed sternum.

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This small amount of tissue, if left untreated, could very likely decompose and give off enough foul odor to become a reason for a mental anguish lawsuit. Both eyes needed preservation, they were both swollen and soft. I placed cotton in the eyes covering the full eye socket and saturated it with some Permaglo 35. We injected both arms utilizing the axillary artery. This solution consisted of 24 oz. of Introfiant, 16 oz. of Permaglo 35, 16 oz. of Metaflow, and 16 oz. of Rectifiant, with 1 oz. of Inr-Tone Latin dye and 16 oz. of warm water. This was injected with an old Portiboy at about 20 lbs. of pressure and an eyeball approach to a low flow. (Eyeballing

for flow is when you hold the arterial tube pointed into the machine and turn the stopcock on until you see a flow that doesn't look to be too high or the stream too much to cause swelling or damage tiny vessels.) When embalming this type of difficult case, their old Portiboy didn't stand up to the challenge.

They tried to keep the flow low but were unable to reach the higher pressure with the low flow. The embalmer tried forcing some chemical into the tissue by raising the flow and this, of course, caused swelling and immediately the machine was turned off. The result was a swollen head that was not preserved and worse, the tissues were leaking. The arms received enough of the stronger chemical to be

embalmed and began drying. The emptied abdominal cavity was dried out and we hypoed the sidewalls and any tissue that needed additional preservation. A 50/50 mix of Introfiant and Metaflow was used to hypo. This 50/50 mix allowed the strong Introfiant to penetrate evenly into the tissue as opposed to being walled off, if the solution was just straight Introfiant. When the sidewalls and abdomen were finished being hypoed, all the tissue took on an even pink color. Hypodermically injecting straight arterial or cavity chemical with no co-injection chemical, can leave areas which don't receive the preservative even when a fan-like motion is used with the hypo trocar due to the 'walling off' action. This uneven walling off effect can leave preserved tissue alongside tissue which is beginning to decompose.

The carotid arteries were accessed and we were ready to try injecting. The left side of the head was showing some signs of receiving the first injection, but there was no firming and no drying of tissue. The right side showed little if any sign of preservation with plenty of signs of edema and soft, unembalmed tissue. We injected the left carotid with a mixture of 16 oz. of Introfiant, 16 oz. of Permaglo 35, 16 oz. of Edemaco and 16 oz. of Rectifiant. The old Portiboy couldn't deliver the pressure needed and the flow was impossible to control. I reverted to an old school flow control by using the stopcock turned $\frac{3}{4}$ of a turn. I also turned the stopcock on and off to mimic a pulsator. The internal carotid was clamped and secure, so the vascular pressure was enough to successfully re-inject the left side of the head. Once the left side had received enough preservative to preserve and begin firming, we tried the right carotid.

This right side, or viewing side, carotid was damaged during the autopsy and tough to access. It was so damaged that we had to raise the internal carotid from the cranial cavity and inject it in reverse.

This right side, or viewing side, carotid was damaged during the autopsy and tough to access. It was so damaged that we had to raise the internal carotid from the cranial cavity and inject it in reverse. That is, injecting toward the face from the open cranium. The internal carotid was raised adjacent to where the stub came out. Just lateral to where the stub came out, the calcified tissue was cracked open using needle-nose pliers. You can place the pliers on the pointed bony process just lateral to the Circle of Willis. This calcified tissue can be cracked with a little