### This week's question:

Surgery can be performed to replace bone and skin or gums inside the mouth. The materials used can come from a corpse or from animals. Assuming the human material is safer, heals faster and has a higher chance of success, is there any *halachic* reason to use material of animal origin? Are there *kashrus* concerns with the animal graft?

#### The issues:

- A) Benefiting from a corpse
- B) Benefiting from non-kosher animal sources
- C) Health; internal injuries, pikuach nefesh, danger to life

## A) Benefiting from a corpse

Allotransplantation, or alografting, transplantation from human materials can come in various forms. Patients' own body materials can be used. Materials can be donated by a live donor, such as genetic match. In some cases, a match is not essential. It can come from a dead person who donated his body for such purposes. This can be done with intact body materials, or by extracting and purifying certain materials to create an artificial type of graft. In such cases, the purpose is often to help the body deal with the issue by itself.

The *halachic* issues that arise include the *mitzvah* to bury the dead and the prohibition against mutilating the body. However, these concern those who produce the items, over whom the patient has little control. There might be some issue with benefiting from such activity. Of more immediate concern are the issues of *tumah*, impurity, when the patient is a *kohain*, and general benefit from a corpse.

The concern for *tumah* arises both at the time it is brought into contact with the patient during the procedure, and afterwards. There is a continuous issue of contact with the *tumah*. Becoming *taamei* is an event. After the event, one cannot become any more *tamei*. In fact, nowadays, everyone is assumed to be *tamei*. At some point we have come in contact with a source of *tuma*, and we have no *parah adumah* process to become purified. However, for a *kohain* there is a separate issue of additional contact with *tumah*.

Tumah applies in specific quantities. A piece of bone must have the minimum size of a lentil to impart tumah by contact. Flesh and must have the minimum size of an olive. [By the way, a similar issue arises with regard to something taken from a live person. However, this must include flesh and bone, and constitute a complete limb.] Both of these are highly unlikely in our case. The material is ground and mixed with saliva and the like. However, even if they do meet these minimum sizes, if the item imparting the tumah is concealed, known as tumah beluah, it does not impart tumah. While it will need to be exposed as it is transplanted, imparting tumah for the short period, it will not continue imparting it later. In addition, gentiles do not impart the same level of tumah as do Jews. The vast majority of the source material is presumed to come from gentile donors.

In regard to benefit, a number of issues need to be addressed. First, what is the basis for the prohibition of benefit? Is it Scriptural? Does it specifically forbid benefit, or is it really an outgrowth of a prohibition on eating? Either way, is it applicable to all parts of the body, regardless of whether they are edible? What is the amount forbidden? Does it apply when the benefit is derived in an unusual manner?

The Talmud distinguishes between different items forbidden to benefit from. Some are forbidden only when used in the normal manner. Usually, this is based on an eating prohibition of some kind. The amount forbidden can also depend on this. Eating is only punishable when an olive sized piece is consumed. Benefit is usually measured by value. Less than a *perutah*, the value of the smallest coin, is not considered benefit. A further complication is that while eating is only punishable for a *kezayis*, less than this is forbidden. It could be considered part of a larger piece, and was, after all, eaten. Benefit really does depend on a minimum amount. Less than this is not considered any benefit at all. Whether it applies to things that are not edible can also depend on this. If an item is never edible, obviously all other benefits are the intended prohibition. [Note: The term edible does not refer to cannibalism. Rather, animals are known to eat human flesh. This can be of benefit to their owners.]

The source to forbid benefit from a corpse is a Scriptural comparison to *eglah aru-fah*, the calf whose neck is broken in the ceremony conducted when a corpse is found outside a town. That, in turn, is derived from the prohibition against benefiting from *kod-shim*, consecrated items. This gives rise to various debates. The source for *kodshim* has a component connected to eating, and a component connected to benefit without eating. Furthermore, the poskim debate whether something is derived in this fashion takes on all of the characteristics of the *mitzvah* it is derived from. Thus, it is possible that benefit from a corpse is not limited to the eating-type applications, since eating is not mentioned in its context. In our case, bone matter is not considered edible.

Membrane could be considered skin, rather than flesh. There is a separate debate on the nature of the prohibition against skin. Some maintain that it is not included in the prohibition against benefit, since *eglah arufah* and *kodshim* do not include a prohibition against benefiting from their skin. There is further debate on how the prohibition applies to gentiles. Some maintain that it is derived from the same source as the prohibition against benefiting from a Jewish corpse, while others distinguish between the two.

In practice, the issue arises nowadays in medical situations. These will be discussed later on. [See Psachim 24b 26a-b Baba Kama 10a 54a Sanhedrin 19b 47b-48a Avoda Zara 12b 29b, etc., Poskim. Tur Sh Ar YD 349:1 368 369 372 etc., commentaries. Igros Moshe YD I:229-230. Tzitz Eliezer XIV:84. Darkei Teshuva YD 155:16.]

#### B) Benefit from non-kosher animals

Animal bone and membrane can also be grafted, called a xenograft. It often involves extracting materials and purifying them, rather than using them intact. Advantages to using these materials include the safety and compatibility. Though human materials seem to be more compatible, they sometimes have the opposite result. The healing process using animal based products also seems to be slower, allowing for a stronger result. The animals used for these products include bovine bone and collagen and porcine membrane. The bovine materials are highly unlikely to come from slaughtered kosher animals. The

porcine material obviously comes from a non-kosher animal. This raises the question of *kashrus*, for concerned patients, since it is placed inside the mouth.

Of course there are *kashrus* issues with the same materials produced or transplanted from a human as well. The notion is that human body materials exist in one's mouth from birth or before, (hopefully!). Therefore, there can be no issue with its *kashrus*. Animal parts are being planted there as a foreign entity. An alograft patient does not feel that he is 'eating' human flesh and bone. A xenograft patient might well feel a certain queasiness, as though he is 'eating' a product with a porcine ingredient. In reality, there is a prohibition against consuming human flesh, but it is not clear exactly how this is derived. It is possible that it is on a lower level than the prohibitions against forbidden animals.

Transplants are not ingested, though some particles might be swallowed in saliva. In general, kashrus issues deal with ingesting an edible food item or its flavor. In addition, the parts that are being used for this might not come from edible parts of the animals. Bone and sinew material is considered non-food. It does not impart flavor either. Even edible parts that have been dried hard, like wood or stone, are presumed to have lost their edible quality. Thus if an item is processed to the point that it may be used medicinally, it is usually not a kashrus issue. Some maintain that if it is mixed with flavors and foodlike ingredients, its edibility is rejuvenated. In our case, it is not being administered as an oral medication. However, some non-kosher foods carry an additional prohibition of benefit in some form. The forbidden fats of an animal are specifically permitted to benefit from. The flesh of a carcass is also permitted, though there are guidelines on how the benefit may be derived. Other foods can be forbidden, such as mixtures of milk and meat or gentile wine. Other forbidden foods carry a prohibition that usually applies to commercial benefit. However, the poskim point out that the reason for this Rabbinical prohibition is to avoid the possibility of ingesting them. Therefore, it could also include other benefits. On the other hand, it might not apply to items that one would never be tempted to eat. Another issue arises with taking an edible food, that is forbidden, and changing it to make it inedible so that one could eat it. The new way to eat it is merely a benefit. However, one may not intentionally remove a prohibition to allow one to benefit from it.

In general, a medical graft should not raise issues of swallowing non-kosher particles. The rule of *shelo kederech achilaso*, or *shelo kederech hana'aso* would apply. Items forbidden Scripturally are usually only punishable when used in the normal fashion. When used in an abnormal way, they do not carry the Scriptural penalty. This seems to mean that they are not forbidden Scripturally, though they are still forbidden Rabbinically. However, the poskim debate this matter. Some maintain that unless the item is specifically forbidden to benefit from, it may be eaten or benefited from unusually, and is not forbidden even Rabbinically. When used for medicinal purposes, they may be benefited from according to all opinions. To avert danger, they may be used normally, and in cases of a non-life-threatening illness, they may be used abnormally. This includes ingesting them as a pill or the like. This applies most commonly to blood and its products, that are used regularly in transfusions and booster shots. Blood of animals is also used for its products. [See E.g., Psachim 24b-25b, Poskim. Tur Sh Ar 117, commentaries.]

# C) Caring for one's health; Internal injuries – Pikuach Nefesh

In our case, the surgery takes place inside the mouth. This will limit eating and

drinking activity while the mouth heals. Apart from the usual susceptibility to infection in the case of oral wounds, there is an element of heightened danger. First the patient's resistance is lowered if he or she cannot eat and drink as usual. The longer this goes on, the more risk the patient is exposed to. This also affects the general quality of life and health. Many *mitzvos* dictate caring for one's health. In particular, other prohibitions are somewhat relaxed when they could impede the healing process. Second, any internal injury is classified as cause for *pikuach nefesh* rules. These can suspend other *halachic* concerns, such as *chilul shabbos*. The Talmud considers any injury 'from the teeth and inwards' as *pikuach nefesh*. Both of these levels of dispensation are based, in part, on the injunction to live by the *mitzvos*, rather than to die by them.

This raises two issues. In our case, before surgery is performed, care must be taken to evaluate the patient and the condition. If it is deemed necessary to do the surgery, this is considered a major health issue. The best possible materials should be used. Second, Once the surgery has been performed and the patient is recovering, he must be considered in a more delicate situation than one recovering from external surgery. This means that during this recovery time it is important not to try to do things that might avoid a *halachic* issue but compromise the safety of the patient.

Pikuach nefesh permits violating all mitzvos except the three cardinal sins, idolatry, adultery and bloodshed. As long as a medicine does not invlve one of these, it may be used to save a life. This applies to immediate and to long term dangers. In our case, a wound inside the mouth can be termed pikuach nefesh. The patient is not in violation of any of the three cardinal sins in order to be healed. Therefore, he may really benefit from these materials in the normal manner. If the situation is deemed medically necessary but not dangerous, and the healing process is also not considered dangerous, one would need to limit benefit from prohibited items to an unusual manner. Specific items are forbidden even in unusual fashion. The poskim debate whether a corpse is included in this. Based on our discussion, the consensus seems to be that given the sources, changes and amounts used, it could be permitted here. [See Psachim 25a Yuma 85b Sanhedrin 74a, Poskim. Tur YD 155:3 349:1, commentaries.]

In conclusion, either item could be permitted, if needed. In this case, it is important to follow the professional opinion of the medical practitioner.

On the Parsha ... He burned it .. ground it fine ... [32:20] Avoda zara is forbidden even after being burned and crushed, but Moshe wanted to destroy it as much as possible. On Parshas Parah ... or [one who touches] bone of a man ... [Chukas 19:16] 'Man' [refers to flesh and] is like bone. Even dried out flesh, like bone, imparts tumah, unless it crumbles or is ground up. [Nidah 55a] Why is it not like avoda zarah? If the Parah Adumah atones for the egel, why is it used to purify temeiei mais? Perhaps, there is a connection between the tumah and the prohibition to benefit. Both apply to a mais due to the respect one must show it. With avoda zara it is the opposite. They apply due to the disgust one must show. Disgust can be felt even after the item is powdered up, while disrespect might not apply when the item is unrecognizable.

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