Ministry of Higher Education and scientific Research
Diyala University
College of Veterinary Medicine

Graduation Research entitled

Histopathological study and surgery the effect of grape seed oil on wound healing in experimental animal (Rabbits)

Submitted by the student

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To the Board of the Factuly of Veterinary Medicine at the University of Diyala, Which is part of the requirements of the bachelor's degree in veterinary Medicine and surgery.

Under the supervision of

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بسم الله الرحمن الرحيم

وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ عَظِيمًا

سورة النساء / آية (١١٣)

In the Name of Allah, the Most Beneficent, the Most "Merciful"

And teacheth thee that which thou knowest not

The grace of Allah toward thee hath been infinite.

An-Nisâ :

Women;113

Dedication

This research paper is dedicated to……..

Who spent their lives for me ... My Father and my

Mother

And all whom helped me to achieve this research

And special thanks to My research's Supervised

Ass.pro.Dr.Ahmed Jassim Mohammad Reza Albayati

Abstract

The current study was conducted to evaluate the effected of grape seed oil in the treatment of skin wounds in Rabbits. The rabbit number (20) divided into ive groups we re used in thi s study. They wound in the all four group treated with group seed oil 5 c.c on wound after operation until complete healing was occurred, the results revealed the wound healing processing grape seed oil occurred faster than the control group. the healing occurred in 1-12 days after wounding in the all four group, while the control was more than 4 weeks, with the clinical follow up, no complications occurred in the all four group, while the control showed some .edema and swelling histopatholol gicaly examination showed the situation process of infiltration of inflammatory cell and fibrous connective tissue formation of granulation hissed in the grape seed oil in all four group was faster than control group. The collagen iber not e after (5) days post treated with grape seed oil. The present study is the first

study in the world . demonstrates that use alternative medicine used grape seed oil is useful for treatment and accelerates healing of wound of skin in Rabbits.

Introduction

1- Grape seed oil is extracted from the seeds of grapes, typically wine grapes. Since grape seeds are usually discarded as part of the wine making process, the extraction and sale of the oil can be a profitable sideline, as well as an efficient use of a by product. In the 20th century, it began to be processed and sold in much higher volume, primarily in the United States and Europe. Many stores sell pure grape seed oil for various applications. Because each seed yields a small amount of oil, grape seed oil is usually extracted chemically. The chemical extraction does have an impact on the flavor of the oil, but it makes it more affordable. Grape seed oil is light in color and flavor, with a hint of nuttiness. It is a polyunsaturated oil, and contains beneficial compounds such as linoleic acid.(1)

There are two primary uses for grape seed oil: cosmetics and culinary applications. When purchasing oil to use in food, shoppers should make sure that it is clearly marked as food grade. Some cosmetic oils are stabilized with chemicals which could be harmful to consume. Like other oils, grape seed oil should be stored in a cool dark place until it is used, unless it has been heavily stabilized. For people who use it rarely, refrigeration is best. Although the oil may congeal slightly, it will go rancid much more slowly when kept cold.(2)

In foods, grape seed oil has numerous uses. It has a very high smoking point, so many people use it for frying. It can also be included in dressings and sauces, and since it emulsifies very well, it does not generally separate when used to make things like mayonnaise. The flavor is also unobtrusive, allowing diners to focus on the main component of the dish. The oil can also be flavored with the addition of things like peppers, truffle shavings, and herbs.[3]

Grapeseed oil is widely used in cosmetics. It is often combined with other oils to make massage oil, since it glides well on the skin and it also has moisturizing properties. This oil appears to assist with skin repair, as it has mildly astringent and antiseptic qualities. Some companies use it as a short term natural preservative in body products, while others integrate it into moisturizing creams, sunscreen, and an assortment of other products.[4]

2- Grape Seed Oil Benefits

The grape seed oil is made by cold-pressing the grape seeds. It has been extensively used around the world. It contains vitamins, minerals, proteins, lipids, carbohydrates and antioxidants. Grape seed oil contains high quantities of Vitamin E and F and also minerals like zinc potassium, copper, calcium, phosphorus, magnesium, iron and selenium. But most of all grape seed oil is rich in proanthocyanidins (OPC) a compound that is high in antioxidants which are 50 times more effective than Vitamin E and 20 times stronger than Vitamin C. Antioxidants are found in grape skins and seeds and are more concentrated in red and black grapes. herbs. Even though grapes are cultivated for thousands of years, grape seed oil was not produced or used on a large scale until the 20th century because of the difficult technology necessary for obtaining it and also because

grape seeds contain a lower percentage of oil as compared to other oil-producing seeds, nuts, or beans.[5]

3- Grape seed oil benefits in cosmetics

In terms of cosmetics grapes seed oil is often used as a moisturizer for its ability to nourish the skin and keep it smooth. Due to its lightness, it is easily absorbed by the skin. Grape seed oil is found in many cosmetic products such as hand creams, body creams, lip balm, and lotions. It is suitable for all skin types, it's regenerative properties moisturize the skin and help maintain the elasticity of the skin. It is increasingly used as massage oil. It provides a great relief to the tired and aching body. It is also useful in the preparation of hair care products.[6]

4-Grape seed oil benefits in health

It has many other benefits and can help relieve varicose veins and spider veins, prevent cancer, dental cavities and diminish premenstrual syndrome. It has anti-inflammatory, anti-allergic, anti-cancerous and anti-microbial activity. Studies have demonstrated that the anti-oxidants contained in the grape seed extract are 20 times more powerful than vitamin C and 50 times greater than vitamin E. It can be used for treating acne and dermatitis, sun burns, age spots, diabetes, high-blood pressure, rheumatoid arthritis, cataracts and macular degenerations, wrinkles and stretch marks. Besides, grape seed oil has antiseptic properties and is good for the skin around the eyes. Hard to believe that for centuries it was considered a waste product.[7]

4-Grape seed oil benefits in cooking

It is very appreciated by many chefs for retaining the original flavor of foods and for its versatility. It is able to handle high-temperatures without smoking, burning or splattering. As it has a smoke point (around 420 F) higher than other oils , such as olive, corn or sesame, grape seed oil can be safely used for deep frying and baking. Not only this, but it is also delicious, with a light nutty flavor lacking the heaviness of other oils. The recommended daily amount for grape seed oil is 25-45 g per day, around 2-4 tablespoons per day. Grape seed oil is an excellent ingredient in salad dressings, marinades and homemade mayonnaise.[8]

It is cholesterol free and helps lower the bad cholesterol and raise the good one. Grape seed oil is health-conscious, especially if you buy one that is free of solvents and preservatives (such as TBHQ and BHT). The cold-pressed organic oil retains most of the natural beneficial ingredients compared to the chemically pressed oils. It is also extremely durable because it contains fatty acids and antioxidants which prevent the potentially breakdown products from excessive frying of foods to form.[9]

5- Grapeseed Oil Benefits

Grape seed oil has several important health benefits. It is a good source of essential fatty acids and vitamin E. The polyphenols and flavonoids found in this oil contain strong antioxidant compounds. Most of the grape seed oil health benefits can be attributed to the presence of these nutrients. These health benefits of grape seed oil are enumerated below. [10]

- The flavonoid 'oligomeric procyanidin', found in grape seed oil is an incredibly strong antioxidant, about 50 times stronger than antioxidants like, vitamin C and E. So, this compound can provide protection against cellular and tissue damage caused by free radicals.

- Grape seed oil can boost the health of the heart and the cardiovascular system by lowering the level of bad LDL cholesterol. This oil can increase the level of good HDL cholesterol, which can reduce the risk of coronary diseases. In addition, two studies showed that taking grapeseed extract and chromium, helped in lowering the bad cholesterol levels.
- Grape seed oil contains linoleic acid, which is a polyunsaturated fatty acid that can prove beneficial for people having diabetes.
- Grape seed oil can help strengthen and repair damaged or broken capillaries and blood vessels. This in turn, can help to improve circulation and alleviate conditions like, varicose veins, spider veins and hemorrhoids.
- Grape seed oil has anti-inflammatory properties, for which it can provide relief against pain and swelling caused by arthritis. Even in conditions like, rheumatoid arthritis, this oil can provide great relief.
- Many studies show that grape seed extracts help in preventing colon, prostate, stomach, breast and lung cancer cells. Antioxidants found in grapeseed extract, help in preventing cancer.
- Grape seed oil can also prove beneficial in conditions like, asthma, allergies, acne and dermatitis.
- The oil from grapeseed reduces LDL (bad Cholesterol) and increases HDL (good cholesterol), which in turn helps in keeping your arteries clear.
- Omega-3, Omega-6, and Omega-9 are the fatty acids found in this oil. These fatty acids benefit us by forestalling any heart diseases and influence the biological properties in our body.
- Grape seed oil contains high levels of Vitamin E, which is a fat-soluble antioxidant. It aids in preventing any cell membrane related injuries.

- The oil from grapeseed helps the immune system and increases the blood circulation as well.
- After any surgery or an injury, the oil reduces the swelling faster than any other medicines.

* Flavonoids found in grape seed oil work to inflect cell-signaling pathways. Oregon State University states, "*The Flavonoids have an antioxidant behavior that responds to iron and copper that bond to proteins*".

- Grapeseed is mildly astringent in nature and helps to tighten and tone skin.
- Grapeseed contains proanthocyanidins, which are very potent antioxidants, that help in diminishing the sun's damaging effects and lessen free radical damage.
- Grapeseed oil is also helpful for healing wounds. It is rich in linoleic acid levels, which is an essential fatty acid that is quite important for the skin and cell membranes.
- Grapeseed oil has great moisturizing properties.
- Grapeseed oil is also rich in vitamins, minerals and causes no skin irritation.[11]

6- Grape Seed Oil For Skin Care

Many people use grape seed oil for skin, basically for its emollient properties. This oil can be found in a wide range of cosmetics like, lip balm, creams, moisturizers, sunblocks and lotions. Even many hair care

products contain this oil. You can use grape seed oil for hair to promote hair growth, and make it smooth and soft. Due to its antioxidant properties, grape seed oil can delay skin aging by minimizing the damage caused by free radicals.[12]

Grape seed oil can provide protection against sun damage as well. It has astringent properties and therefore, can tighten the skin. The linoleic acid found in grape seed oil can be very beneficial in skin conditions like, acne, dermatitis and eczema. Linoleic acid can soothe and nourish the skin, and help it to repair. Vitamin E on the other hand, keeps the skin firm and smooth. Grape seed oil is easily absorbed by the body, and it can be used for reducing age spots, sun burn, wrinkles and stretch marks as well.[13]

7-Grapeseed Oil Side Effects

Short-term treatment with appropriate doses of grape seed oil extract typically does not elicit side effects. Health professionals at the University of Maryland Medical Center recommend limiting your treatment with grape seed oil extract to no more than 12 weeks to lower your risk of developing side effects.

Mild side effects associated with grape seed oil extract include elevated blood pressure, dizziness, headache, nausea and indigestion, reports the National Center for Complementary and Alternative Medicine. Additionally, you may notice that your scalp appears unusually dry or flaky and itches profusely. If any of these side effects become severe or persist, contact your doctor for further evaluation and care.[14]

Grape seed oil

Grape seed oil in clear glass vial

Fat composition	
Saturated fats	Palmitic: 7% Stearic: 4%
Unsaturated fats	86%
Monounsaturated	16.1%
• Palmitoleic acid	<1%
• Oleic acid	15.8%
Polyunsaturated	69.9%
• Omega-3 fatty acids	α-Linolenic: 0.1%
• Omega-6 fatty acids	Linoleic: 69.6%

Properties	
Food energy per 100 g	3,700 kJ (880 kcal)
Smoke point	216 °C (421 °F)
Iodine value	124-143
Saponification value	126 (NaOH) 180-196 (KOH)
Unsaponifiable	0.3% - 1.6%
Peroxide value	2.92 mequiv/kg

Grape seed oil (also called **grapeseed oil** or **grape oil**) is pressed from the seeds of grapes, and is thus an abundant by-product of winemaking.[15]

Uses

1- Cooking

1. Grape seed oil has a moderately high smoke point of approximately 216 °C (421 °F).Yet, the oil is predominantly polyunsaturated and it is not recommended for cooking. This is due to the fact that polyunsaturated fat is so easily damaged by heat. Due to its clean, light taste, and high

polyunsaturated fat content, it may be used as an ingredient in salad dressings and mayonnaise and as a base for oil infusions of garlic, rosemary, or other herbs or spices. It is also excellent for use in baked goods, pancakes, and waffles. It is also sprayed on raisins to help them retain their flavor. The metabolic energy density of grape seed oil is typical of vegetable oils: approximately 3,700 kJ (880 kcal) per 100 g, or 500 kJ (120 kcal) per 15 ml tablespoon.[16]

2-Cosmetics

Grape seed oil is a preferred cosmetic ingredient for controlling moisture of the skin. Light and thin, grape seed oil leaves a glossy film over skin when used as a carrier oil for essential oils in aromatherapy. It contains more linoleic acid than many other carrier oils. Grape seed oil is also used as a lubricant for shaving.[17]

3-Potential medicinal benefits

The properties of grape seed oil provide health benefits when consumed. A 1993 study supports the claim that grape seed oil increases high-density lipoprotein (HDL-C or "good cholesterol") levels and reduces LDL levels.[18]

Although grape seeds contain antioxidants and other biologically active compounds,[19] the cold-pressed grape seed oil contains negligible amounts due to their insolubility in lipids.[20] For instance, sufficiently high amounts of resveratrol occur in grape seed for it to be extracted commercially,[21] yet it is almost entirely absent in the grape seed oil. Consumption of chardonnay grape seed procyanidin extract has also been found to prevent high-fat diet-induced obesity in hamsters by improving adipokine imbalance and oxidative stress markers.[22]

4-Potential medicinal complications

Oligomeric procyanidin complexes found in grapeseed extract found in grapeseed oil may react with anticoagulants and phenacetin.[23]

Grapeseed oil has sometimes been found to contain dangerous levels of polycyclic aromatic hydrocarbons because of direct contact with combustion gases during the drying process.[24]

5-Composition

Grape seeds (Nr. 7 and 8) and grapes

The following table lists a typical fatty acid composition of grape seed oil:[25]

Acid	Type	Percentage
Linoleic acid	ω−6 unsaturated	69.6%[10]
Oleic acid	ω−9 unsaturated	15.8%
Palmitic acid (Hexadecanoic acid)	Saturated	7%
Stearic acid (Octadecanoic acid)	Saturated	4%
Alpha-linolenic acid	ω−3 unsaturated	0.1%
Palmitoleic acid (9-Hexadecenoic acid)	ω−7 unsaturated	less than 1%

Grape seed oil also contains 0.8 to 1.5% unsaponifiables rich in phenols (tocopherols) and steroids (campesterol, beta-sitosterol, stigmasterol).[26]

Grapeseed oil contains small amounts of vitamin E, but safflower oil, cottonseed oil, or rice bran oil contain greater amounts. Grapeseed oil is high in polyunsaturates and low in saturated fat.[27]

Literature review

The health effects of grapes have recently been attributed to the presence of antioxidants, and the seeds of grapes contain many of these healing compounds. Grape seeds have been pressed for their oil for several centuries, used as a popular skin treatment and cosmetics ingredient, and as a carrier oil for treatment with essential oils and aromatherapy. Grape seed extract and grape seed oil include beneficial and negative side effects, although the benefits far outweigh the reported harmful effects.[28]

- Grape seed extracts have a variety of positive effects on the body, and are taken internally and used topically. Grape seed extract contains powerful phytochemicals, including polyphenols and. Proanthocyanidins

  Grape seed oil is also used as a part of a dietary approach to health, replacing partially hydrogenated oils that can be a source of transfatty acids. Grape seed oil is not a skin irritant.

- Grape seed extract is a safe supplement taken as a pill or a capsule. Effects of the treatment are best seen in the circulatory system, and include healing and supporting healthy blood vessels. The antioxidants in grape seed extract may prevent cancer. Grape seed extract is useful for its effects on high blood pressure,

artherosclerosis, vision problems, and reducing cholesterol and swelling.

Grape seed extract has been found to be safe for prolonged use, longer than eight weeks, with few side effects. Reported side effects include dry scalp, nausea and dizziness.

- Grape seed oil is used in many cosmetics and is fairly benign. It's a traditional remedy for stretch marks and can be used on delicate areas of the face, such as under the eyes. Grape seed oil is high in vitamin E and spreads well on the skin.[29]

  Linoleic acid, a main component of grape seed oil, has been used for decades to treat eczema and dry skin. The emollient effect of grape seed oil lubricates the skin and it's used by massage therapists.

- Side effects of using grape seed oil to prepare food are hard to quantify. The oil is a rich source of omega-6 fatty acids, which are polyunsaturated fatty acids.

  A diet high in polyunsaturated fatty acids has been linked to a decrease in the production of DHA, an important nutrient for brain cell development. Polyunsaturated oils can also lower "good" HDL cholesterol as well as the "bad" LDL cholesterol.

  The linoleic acid in grape seed oil can reduce complications from diabetes when added to the diet.

- Grape seed extract may interfere with prescription and over-the-counter medication, but possible interactions haven't been studied. The antioxidants in grape seeds may boost the active ingredients in

prescription blood thinning medication, and slow down blood clotting, so use under a doctor's supervision.[30]

Some side effects of grape seed oil may not be reported. Always consult your doctor or healthcare specialist for medical advice. You may also report side effects to the FDA. No common side effects have been reported with the proper use of this medicine. Seek medical attention right away if any of these severe side effects occur while taking grape seed oil: Severe allergic reactions (rash; hives; itching; difficulty breathing; tightness in the chest; swelling of the mouth, face, lips, or tongue); changes in color, sensation, or temperature of a leg or arm.[31]

Grape is likely save for most people. Eating large quantities of grapes, dried grapes, raisins, or sultanas might cause diarrhea. Some people have allergic reactions to grapes and grape products.Some other potential side effects include stomach upset, indigestion, nausea, vomiting, cough, dry mouth, sore throat, infections, headache, and muscular problems. Pregnancy and breast-feeding: Not enough is known about the use of grape in medicinal amounts (supplements or amounts that are higher than normal food amounts) during pregnancy and breast-feeding. Stay on the safe side and avoid use.[32]

Grape seed extracts are industrial derivatives from whole grape seeds that have a great concentration of vitamin E, flavonoids, linoleic acid and phenolic procyanidins (also known as OPC or oligomeric procyanidins). The typical commercial opportunity of extracting grape seed constituents has been for chemicals known as polyphenols having antioxidant activity in vitro.[33]

Human case reports and results from basic research provide preliminary evidence that grape seed extract may affect heart diseases such as hypertension, high levels of blood cholesterol,cancer,[34] platelet aggregation or inflammation.[3] Some of these effects have been demonstrated in vivo in animal models. According to the American Cancer Society, "there is very little reliable scientific evidence available at this time that drinking red wine, eating grapes, or following the grape diet can prevent or treat cancer in people".[35]

A polyphenol contained in grape seeds is resveratrol, which is under study for its possible effect on cancer cell growth, proliferation or apoptosis, among other potential chemopreventive mechanisms.[36]

Other preliminary research on disease models

- skin and wounds – OPCs induced vascular endothelial growth factor and accelerated healing of injured skin in mice[37]
- teeth – seed phenolics may inhibit oral sugar metabolism and retard growth of certain bacteria that cause dental caries[38]
- bones – grape seed extracts enhanced bone density and strength in experimental animals[39]
- in vitro cancer studies – grape seed proanthocyanidins decreased tumor numbers and reduced the malignancy of papillomas[40]
- ultraviolet damage – dietary proanthocyanidins are under study for mechanisms against carcinogenesis and sunscreen protection[41]
- anti-viral effects[42][43]
- antibacterial properties[44]
- liver function[45]
- blood flow and fluid balance[46]

There are 13 clinical trials (January, 2012) assessing potential effects of grape seed extracts on human diseases, such as breast cancer, blood estrogen levels in postmenopausal women, and coronary artery disease.[47]

One clinical trial with adults having coronary disease or cardiac risk factors concluded that: "Four weeks of muscadine grape seed supplementation in subjects with increased cardiovascular risk did not produce a statistically significant increase in brachial flow-mediated vasodilation or a significant change in other biomarkers of inflammation, lipid peroxidation, or antioxidant capacity. However, the muscadine grape seed supplement did result in a significant increase in resting brachial diameter. The clinical significance of the effect on resting diameter is not yet established."[48]

A meta-analysis of randomized controlled trials concluded that "grape seed extract appears to significantly lower systolic blood pressure and heart rate, with no effect on lipid or C-reactive protein levels."[49]

The US National Center for Complementary and Alternative Medicine reported that oral administration of grape seed extract was well tolerated in people over 8 weeks.[50] In one completed clinical trial, grape seed extract did not alleviate the hardening of breast tissue in female patients undergoing radiation therapy to treat breast cancer.[51]

Oral grape seed extract is used in capsules or tablets usually containing 50 mg or 100 mg. Insufficient scientific information is known, however, about how long-term use of grape seed extract might affect health or any disease.

Side-effects and cautions, other NCCAM advisories.

- In general, grape seed extract is well tolerated when taken by mouth, although it is better tolerated when encapsulated, as its taste is bitter. It has been used safely for up to 8 weeks in clinical trials.
- Side-effects most often include headache, a dry, itchy scalp, dizziness, or nausea
- Interactions between grape seed extract and medicines or other supplements have not been carefully studied

Because of the possible action of proanthocyanidins on limiting platelet adhesion,[52] grape seed extract may act as a blood-thinner, increasing clotting time.Grape seed extract is also an aromatase inhibitor *in vitro*, i.e. it may suppress the conversion of testosterone to estradiol. [53]

-The First Study in The World-

Material and methods

Material

- Scalpel

-Suture surgical silk

-neddle holders

-alcohol 70 %

-gauze

-poredeniodine

-grape seed oil %

-syringes

-lidoocaine

-water and detergent to washing the area

-scissors surgery

-rabbit number 20 divided into five group

(Figure1)

Cage of animals

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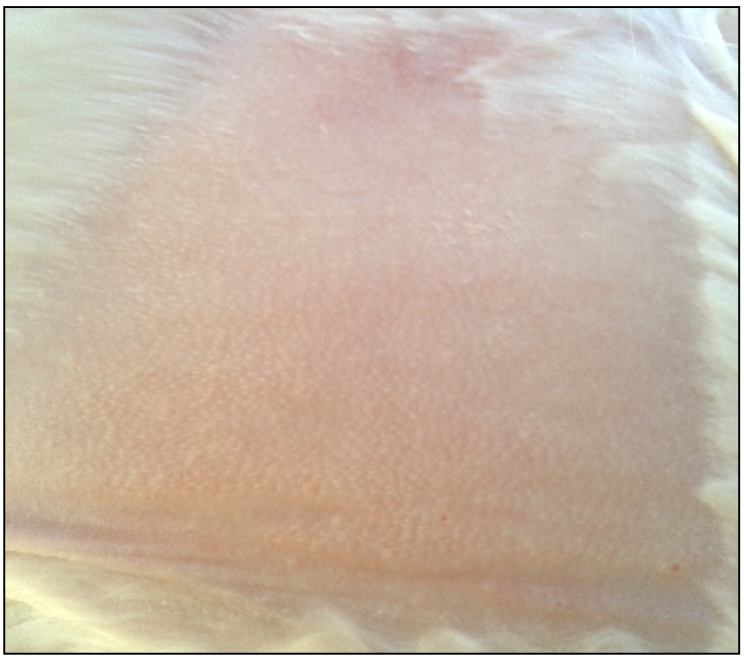

(Figure 2)

Clipping and Sheaving and Disinfectant

(Figure 3)

Incision of the wound

Shows application of grape seed oil skin wound in Rabbit

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(Figure 4)

Take sample of skin after (5) days

(Figure 5)

Take sample of skin after (10) days

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(Figure 6)

Take sample of skin of after (15) days

(Figure 7)

Take simple of skin after (20) days .

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(Figure 8)

The control not treated with grape seed oil take sample from control

(Figure 9)

Showing wound healing after (5)days of used grape seed oil.

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(Figure 10)

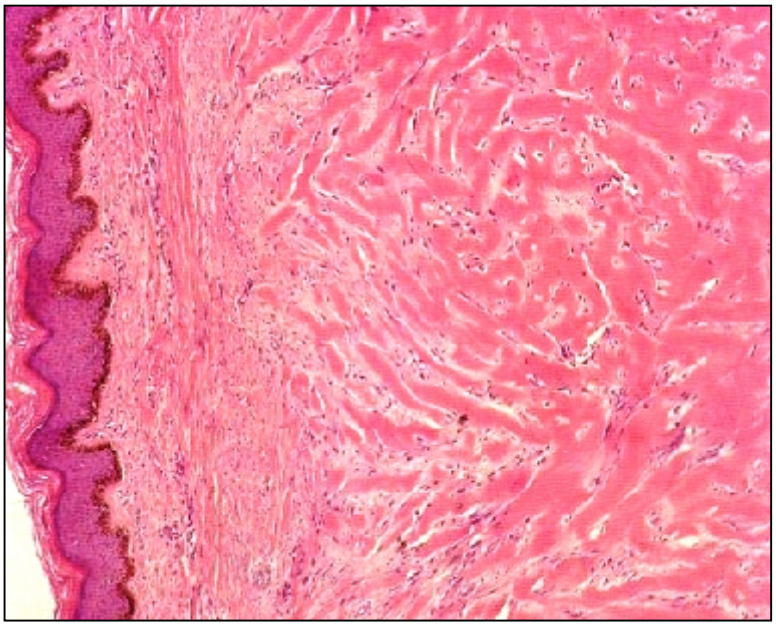
Showing wound healing after (10) days of used grape seed oil.

Result

Clinical observation : the clinical examinations shoed simple rendness and swelling were observed immediately after wounding with light elevation in temperature of wound area. These signs began to subside gradually during the 2 -3 days after wound in the grape seed oil group. While the wound in control group more swollen and warmer than first group and needed (4-5) days to subside . There is no infection in to grape seed oil treated Rabbits showed in the control Rabbits exudates . Figure (8) and systemic antibiotic and local antibiotic. The wound in the grape seed oil in Rabbits had completely healing in (10-12) days but these signs of haling in the control group where slower and demanded more than 4 weeks complete the healing .

Histopathical finding :-

In grape seed oil treated group the microscopical picture of the wound area at five days post treated with grape seed oil showed collagen Fiber with mononuclear cells (Figure11) at the days after wounding the wound revealed large amount of granulation tissue formation with newly blood vessels (Figure12) . The section of skin wound reflected abundant regular collagen fiber the wound area at fifteen days post treatment (Figure13) while the histological picture in control group at(10) days after wound showed hemorrhage with inflammatory cell only cells infiltration with congested blood vessels . (Figure16) section at fifteen day post operation showed collagen fiber with aggregation of inflammatory cell (Figure15) .



(Figure 11)

Infiltration of collagen fiber and infiltration of cell Netrophils .The beginning of formation of newly blood vessels . H & E 40 after (5) day

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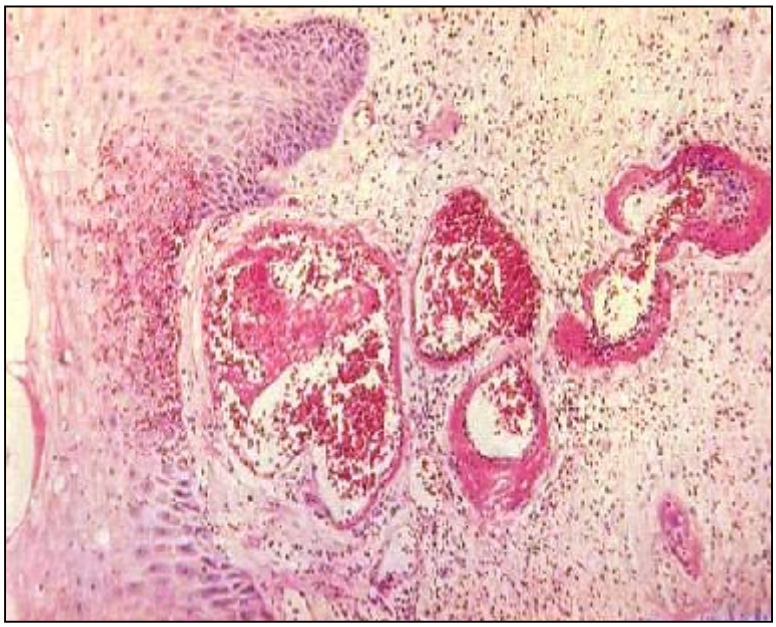
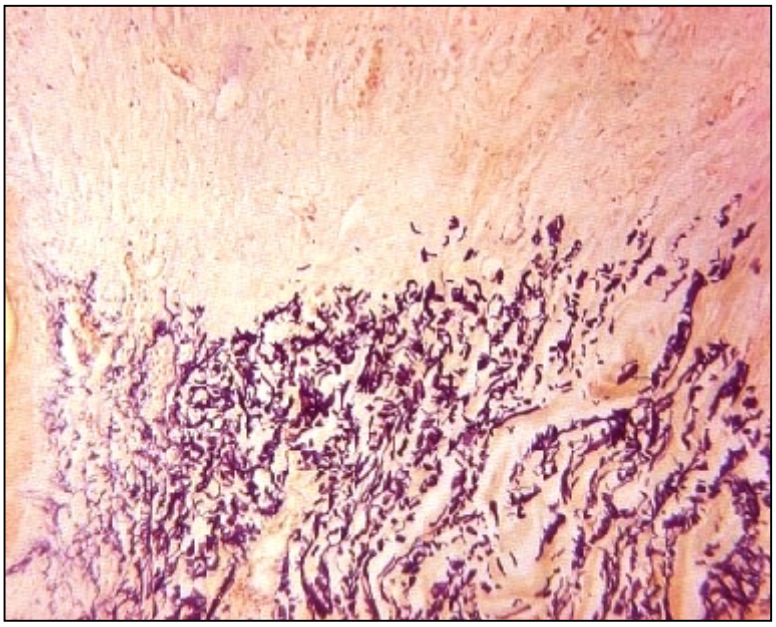


(Figure 12)

Infiltration of inflammatory mononuclear cell with formation of newly blood vessels .(angina genesis) after (10) days treat with grape seed oil H & E 40



(Figure 13)

Infiltration mononuclear cell and infiltration of fibrous connective tissue (regular collagen fiber) H & E 40, after (15) days.

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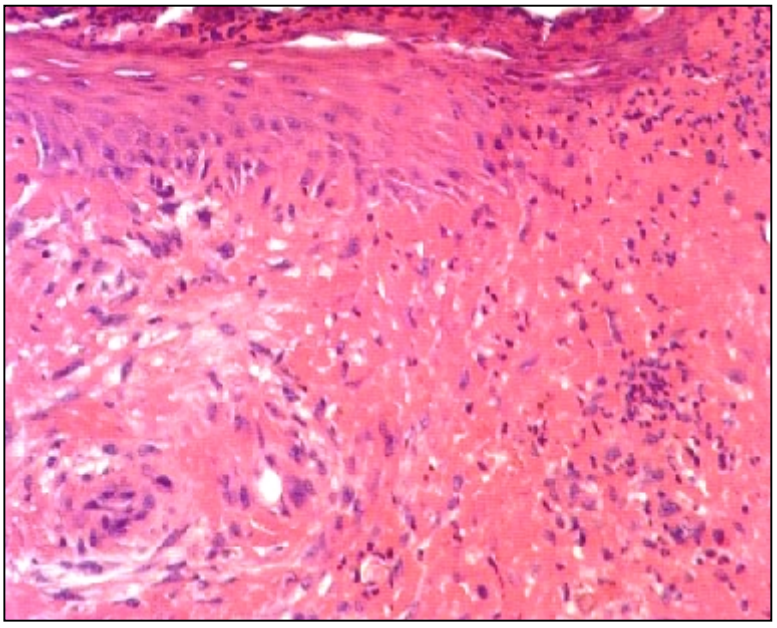
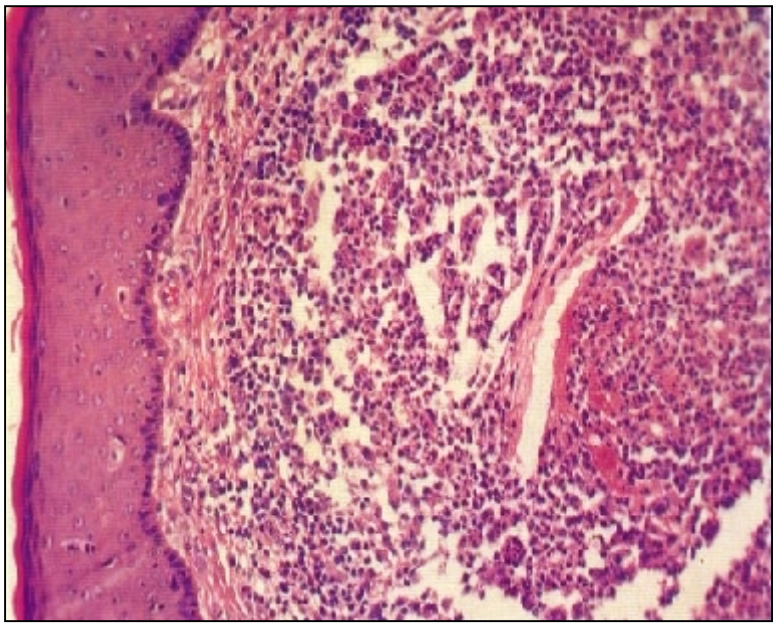


(Figure 14)

Infiltration of fibrous connective tissue with scare formation after (20) days treated with grape seed oil .



(Figure 15)

Formation of fibrous connective tissue with scare formation

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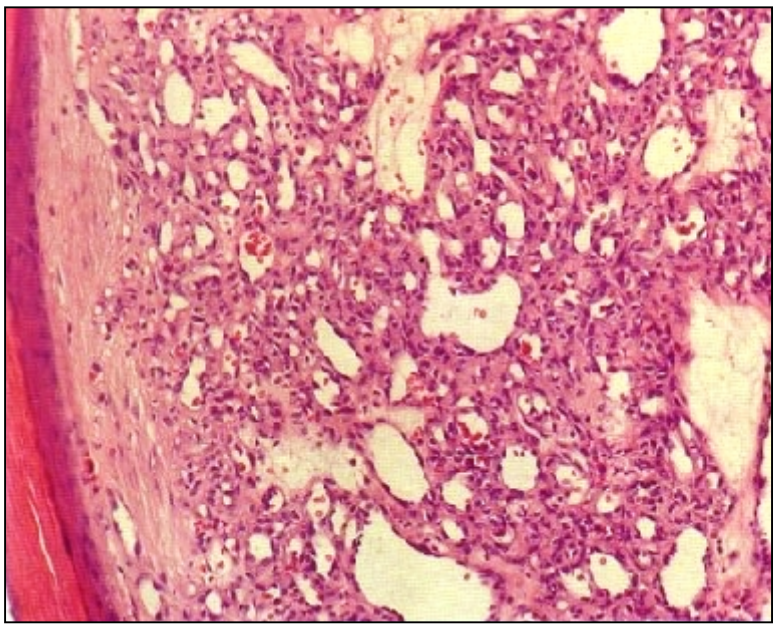

(Figure 16)

Control after(10) days formation of blood vessels with inflammatory cell

Discussion

The result of the present study show incremental effect on wound healing to grape seed oil treated group in compared to control group . the results of clinical observations were appeared that slight inflammation on the site of operation which was subsided in 2-3 days in grape seed oil. had anti inflammatory activity that rapidly reduces pan and edema. This agreed with authors (4) . According to our finding there was no infection , edema or exudates occurred in the grape seed oil group, which seems to support the results other studies (8) antibacterial agent and stimulated immune response with in a wound as well enhances wound healing (1) . in second group , two rabbit showed wound infection although it created under a septic infection . other author (14) reported that grape seed oil has dehydrating effect due to hygroscopic from its high . The present study indicated that the grape seed oil was very effective in wound healing because its achieved complete healing within 10-12 days and this lead to make the healing process in grape seed oil treated group much faster than control group . this agrees with other workers (14،19) that reports the grape seed oil has the ability to accelerated healing because of its direct effects on tissue and antibacterial properties which include decreases inflammatory edema attracts macrophages which cleanse the wound , provide a local cellular energy source , and protectively covers the wound histologically , the levels of healing process were the highest in the grape seed oil treated group on days 5,10 , 15 , 20 may indicate that grape seed oil in the inflammatory reaction in addition activated the synthesis and maturation of collagen fibers , this agreement with (31) other author (41، 43) refer to that the grape seed oil hastens wound healing by activation

the release of inflammatory cytokines from surrounding tissue cells , mainly monocytes and macrophages as well as activation of endothelial cells and fibroblast the present study demonstrates the present study demonstrates that use of grape seed oil I useful for treatment and accelerates healing of full thickness wounds of skin in Rabbits .

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