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EVOLUTION OF GRIDHRASI (SCIATICA) – A REVIEW

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ABSTRACT :

Āyurveda is one of the most ancient medical sciences of the world dedicated for the promotion of health, prevention and cure of disease since time immemorial. According to Āyurveda simple freedom from the diseases cannot be considered as health. To become healthy, a person should be happy both mentally and physically other than being simply free from disease or infirmity.Change in the life style of stressful and competitive modern man has created disharmony in his biological system. With busy professional and social life, improper posture, continuous strenuous work, over exertion, jerky movements during travel and sports create biodynamic changes in the weight bearing spinal column. This may cause variety of pain causing spinal disorders. Among them low backache and Sciatica are very common which lead to the major loss of working hours of professionally active population. Gridhrasi (Sciatica), which is considered as one of the Vatic disorders, very commonly seen in clinical practice and the incidence is expected to be increasing through the coming years due to erroneous diet habits, faulty postures, lack of physical exercise, sleep disturbances and mental stress. The term Gṛdhrasī indicates the typical gait that resembles of Gṛdhra i.e. vulture. The cardinal features of Gṛdhrasī are pain, pricking sensation, stiffness and repeated twitching observed sequentially in the buttocks, low back, and thigh, back of knee, calf region and foot with restricted lifting of the affected leg,In the present study, the historical development in the field of Gridhrasi and its modern counterpart sciatica is reviewed.

Key words: Gridhrasi, Sciatica

INTRODUCTION: The disorders which impair the movements of legs are as old as the existence of human being, as walking is an inevitable function since the existence of man on the earth in pursuit of food.Gṛdhrasī (Sciatica syndrome), which is considered as one of the Vatic disorders [(1)], very commonly seen in clinical practice and the incidence is expected to be increasing through the coming years due to erroneous diet habits, faulty postures, lack of physical exercise, sleep disturbances and mental stress. The term Gridhrasi indicates the typical gait that resembles of Gridhra i.e. vulture. The cardinal features of Gridhrasi are pain, pricking sensation, stiffness and repeated twitching observed sequentially in the buttocks, low back, and thigh, back of knee, calf region and foot [(3)] with restricted lifting of the affected leg [(35)].The most common disorder which affects the movement particularly in the most productive period of life is low back pain, out of which 40% of patients will have radicular pain and this comes under the umbrella of Sciatica-syndrome. Sciatic neuralgia is a condition in which pain begins in the low back (lumbar region) and radiates along with the distribution of sciatic nerve i.e. the postero-lateral aspect of thigh and leg up to foot.

DEVELOPMENT OF GRIDHRASI IN DIFFERENT AYURVEDIC ERA:

CARAKA SAMHITA (1000 BC) The description of Gṛdhrasī vāta is very brief in this Saṃhitā and no separate nidāna or saṃprāpti are cited. Gridhrasi is considered as one of the eighty vatavyadhis[1]. However, it is classified into two varieties – 1.Vātaja, 2.Vātakaphaja[2]. Vataja Gridhrasi is said to be characterized by stiffness and tightness, pain and pricking sensation radiating from buttocks to one or both the legs. In vata kaphaja variety tandra, gaurava and aruchi are the associated features[3].Sirāvyadhana, Agnikarma and Vastikarma are advocated as the specific treatment of Gṛdhrasīvāta[4].

SUŚRUTA SAṂHITĀ (600BC – 400BC): Suśruta observed that one of the two main functions of Vāta is gati, i.e. movement[5], which indicates that the Vāta itself is responsible for all the movements of the body[6].In Śārīrasthāna of Suśruta Saṃhitā the structure of pṛṣṭha (spinal column), pāda (leg) and its joints etc. are described[7]. In Marmaśārīra it is mentioned that trauma to Kukundara marma (lumbar area of vertebral column) causes sensory and motor loss in lower limbs and leads to disability[8]. In Sirāvyadhana Śārīra the position, place and method of Sirāvyadhana in Gṛdhrasī are mentioned[9].Though Suśruta Saṃhitā represents Dhanvantari sampradāya, has given due importance to Vāta disorders by allotting the first chapter of Nidāna sthāna for Vātavyādhis. Clinical features of Gṛdhrasīvāta are described in the same chapter[10]. Some allied conditions like Khañja, Paṅgu, Kalāyakhañja etc are also mentioned but no classification of Gṛdhrasī is found in Suśruta Saṃhitā.The description pertaining to classification, clinical features, prognosis, etc., of Sandhimukta[11] suits that of lumbar disc prolapse which is responsible for majority of Sciatica (Gṛdhrasī) cases. Sirāvyadhana along with general measures of Vātavyādhi Cikitsā are indicated for Gṛdhrasī, Khañja, Paṅgu, Vātakaṇṭaka, Pādadāha, Pādaharṣa and Dhamanīgata Vātaroga[12]. The use of Guggulu in Vāta disorders was first time introduced in Suśruta Saṃhitā[13].

AṢṬĀṄGA SAṄGRAHA (6th Century AD) :Vṛddha Vāgbhaṭa has mentioned that the site of Vāta in general is in the lower part of the body[14] and it also resides in kaṭi, sakthni, pāda and asthi[15] which is similar to the symptomatology of Sciatica. Vṛddha Vāgbhaṭa follows Suśruta regarding the description of Gṛdhrasī. Gṛdhrasī is described as the disorder of Vāta sited at Kandara[16] which has not been observed by any of his previous Ācāryas.

AṢṬĀṄGA HṚIDAYA (7th Century AD): The signs and symptoms of Gṛdhrasī are mentioned in Vātavyādhi Nidāna[17] and specified that Gṛdhrasī is caused by Vāta prakopa in snāyu[18]. For the management of snāyugata kupita Vāyu, snehana, dāhakarma and upanāhasveda are advised[19].The site for Śirāvyadhana in case of Gṛdhrasī is described just like Aṣṭāṅgasaṅgraha in Śirāvyadhanavidhi adhyāya of Sūtrasthāna[20].

BHELA SAṂHITĀ (7th Century AD): In Bhela Saṃhitā Vāta disorders are classified into two groups – 1. Sarvāṅgira (where the total body gets involved) 2. Ekāṅgaroga (where only a particular part of the body gets involved). The disorders of pāda, pādatala, jaṅghā, jānu, ūru, kaṭi, pṛṣṭha are considered as Ekāṅgarogas[21].In Bhela Saṃhitā different body parts are attributed to 16 Ādhyātmadevatās and it was the belief that the functions of those body parts are controlled by their respective devatās. It is surprising to note that

saṃvegadāna (carrying and giving or transmission of impulse) is attributed to Vidyut (electricity)[22] which was discovered by modern physiologists after his observations some centuries later. The clinical features of Gṛdhrasīvāta are not found in the available Bhela Saṃhitā in which many portions are lost.In case of Gṛdhrasīvāta the use of Balātaila, Mūlakataila, Sahacaratailа for Vasti, Pāna and Unmardana, in addition to Raktamokṣaṇa are given importance[23].

KĀŚYAPA SAṂHITĀ (7th Century AD):Kāśyapa considered asthi and majjā as primary sites of Vāta[24], which indicates pṛṣṭha as Vāta sthāna, the involvement of which leads to Gṛdhrasīvāta as observed by modern medicine. Sneha, sveda and vasti are described in detail. Gṛdhrasīvāta is mentioned among the Vātavyādhis[25] but its description and management are not found in this treatise.

MĀDHAVANIDĀNA (7th Century AD):Gṛdhrasīvāta finds place in the chapter of Vātavyādhi Nidāna. Mādhavakara follows Caraka in describing Gṛdhrasī up to some extent. The two types of Gṛdhrasī i.e. Vātaja and Vātakaphaja are described more elaborately than Caraka depicting the specialization in Nidāna which facilitates proper diagnosis[26].In Mādhavanidāna, Vātavyādhis are described more elaborately incorporating all the syndromes described by Caraka, Suśruta and Vāgbhaṭa. Mādhavanidāna quotes that Khañja, Paṅgu, Kalāyakhañja, Pādadāha, Pādaharṣa and Khallī have some similarities with Gṛdhrasī. The ślokas are directly taken from Caraka Saṃhitā, except for the descriptions of two varieties of Gṛdhrasī which appears to be the original contribution of this treatise.

KALYĀNA KĀRAKA (8th Century AD): The 8th chapter termed as Vātarogādhikāra deals with the pathology and symptomatology of Gṛdhrasīvāta and its treatment is described in the 12th chapter named Vātaroga Cikitsā.

HĀRITA SAṂHITĀ (10th to 12th Century AD): Gṛdhrasī is specifically mentioned as a disorder of Vyānavāta[27]. Such specific mentioning is not found in any of the previous or subsequent work.Hārita was the first to give importance to Gṛdhrasī by naming the 22nd chapter of Tṛtīyasthāna of his treatise as Gṛdhrasī cikitsitādhyāya. The description of the clinical features of Gṛdhrasī is briefly given in this Saṃhitā[28]. The treatment part is elaborate and specific importance is given to Raktamokṣaṇa, Svedana, Abhyaṅga and oral administration of specific drugs like Rāsnāpañcakakvātha, Śatāvaryādicūrṇa, Ajamodādicūrṇa etc[29].Dāhakarma is advised only in cases refractory to the above treatment. The site where Dāhakarma is to be done is also specified[30].

CAKRAPĀṆIDATTA (11th Century AD): Cakrapāṇi has classified the Vātarogas into two: 1.Sarvāṅga and 2.Ekāṅga[31]. While commenting on the functions of Vyānavāta he states that gati indicates ākuñcana (flexion) and Prasāraṇa (extension)[32].In the description of Gṛdhrasī Cikitsā in Caraka Saṃhitā there are two pāṭhas. Cakrapāṇi adopted one pāṭha i.e., "Antarā kaṇḍarāgulpho śīrā bastyāgṇikarmaca". He opines that Śirāvyadhana is to be performed in between Kaṇḍarā and Gulpha[33].He is the first to describe the line of treatment of Gṛdhrasī in a very detailed manner. The importance is given to Pācana, Ūrdhva and Adho Śodhana before going for Vasti. He has also advised Śastrakarma, Dāhakarma, Lepana and Śirāvyadhana if not cured by medical management[34].

ARUṆDATTA (12th Century AD): Aruṇdatta in his Sarvāṅgasundarā commentary on Aṣṭāṅgahṛdaya clearly mentioned that due to Vāta in kaṇḍarā, the pain is produced at the time of raising leg straight and it restricts the movement of the leg too[35]. This is an important clinical test nowadays for the diagnosis of Sciatica, known as Straight Leg Raising Test.

VAṄGASENA SAṂHITĀ (12th Century AD): Vaṅgasena followed Mādhavanidāna in describing nidāna and Cakradatta for cikitsā. He added 'Pāyu' in the course of radiation of the pain. So according to him the pain sequentially radiates through sphik, pāyu, kaṭi pṛṣṭha, ūru, jānu, jaṅghā and pāda[36]. In addition to the therapies mentioned by Cakradatta he has contributed many original formulations and measures for the treatment of Gṛdhrasī and allied conditions.Karṣaṇa cikitsā, rūkṣaṇa, dīpana, pācana drugs are prescribed for Gṛdhrasī in the beginning. Iṣṭikāsveda, Mardana and Upanāha are also prescribed. Vasti is advised only in dīptāgni and nirāma condition after Śodhana by Vamana and Virecana[37]. He stated that Śirāvyadhana is to be adopted in two or three places followed by Guñjā kalka lepa for immediate relief of pain in Gṛdhrasīvāta[38]. Sirāvyadhana is given special importance in Gṛdhrasī and other Vāta disorders involving lower limbs like Khañja, Paṅgu, Pādadāha, Pādaharṣa, Vātakaṇṭaka etc.[39]. For Gṛdhrasī he has advised to perform Śirāvyadhana four aṅgulas below vasti and by this if symptoms do not subside then Dāhakarma in kaniṣṭhikā aṅgulī is advised[40].

GADANIGRAHA (12TH CEN. AD) [41]

In this text, treatment part of Gṛdhrasī has been explained at two places -

1) In 4th chapter of Prayoga Khaṇḍa termed as Guṭikādhikāra.

2) In 19th chapter of Kāyacikitsā Khaṇḍa named as Vātarogādhikāra.

The author followed Mādhavanidāna as it is in describing the features and types of Gṛdhrasī. Probably he was the first person to point out the necessity of Raktaduṣṭihara therapies in Vātarogas when the usual measures fail to achieve the desired results.Moreover, he describes the line of treatment for Gṛdhrasī in a very detailed manner i.e. Śodhana, Vasti preceded by Urdhvaśodhana, Śastrakarma (Vidāraṇa), Dagdhakarma, Lepa, Raktamokṣaṇa etc., similar to Cakradatta.

ḌALHAṆA (12th Century AD):Ḍalhaṇa is the author of famous Nibandhasaṅgraha commentary on Suśruta Saṃhitā. It appears that he considered Gṛdhrasī nāḍī (sciatic nerve) as kaṇḍarā stated by Suśruta. He termed it as 'Mahāsnāyu' which runs from pārṣṇī (lumbar region) to Gulpha (ankle joint) indicating that it is the biggest nerve in the body. He mentioned that Gṛdhrasī is termed as "Raṇdhrīṇi" by lay people and also mentioned about its painful nature. Two types of Gṛdhrasī due to Vāta and Vāta-kapha are mentioned but their separate clinical features are not given[42]. While commenting on Gṛdhrasī cikitsā he mentioned that Śoṇitamokṣaṇa is to be performed only after adopting general therapies of Vāta disorders[43].

ŚĀRĀṄGADHARA (13th Century AD):Śārāṅgadhara simply mentioned Gṛdhrasī among eighty nānātmaja Vāta disorders. He mentioned that the disorders of Caraṇa i.e. legs are forty-two in number[44].Āḍhamalla the author of Dīpikā commentary on Śārāṅgadhara Saṃhitā stated that Gṛdhrasī is popularly known and some people call it as 'Rādhīnā' also. He opines that Viśvaci is also similar to Gṛdhrasī affecting the arm.

INDU (13th Century AD): In Śaśīlekhā commentary on Aṣṭāṅgasaṅgraha, Indu mentioned that the symptoms of Gṛdhrasī are similar to Viśvaci. If restricted movement and pain occurs in upper limb, the disease is called as Viśvaci whereas pain and restricted movement occurring in lower limb is termed as Gṛdhrasī.

VAIDYACINTĀMANI[45]**:**Many preparations which are useful in Vātarogas and Gṛdhrasī are described. Important among them are – Dvātriṃśatikvāth, Sunṭhyādiguggulu, Katakyāditaila, Mahāviṣagarbhataila, Samīrapannagaras, Samīragajakeśarīras, Vātagajāṅkuśras, Sūryaprabhāguṭikā etc.

BĀSAVARAJĪYAM (12th -15th Century AD)[45] **:**The author of Bāsavarājīyam described many syndromes of Vāta which are not mentioned by his previous authors along with specific Rasauṣadha prescriptions for their treatment.He included Kalāyakhañja, Gṛdhrasī, Viśvaci, Khallī, Paṅgu, Khañja and Ūrusthambha in the list of Balavattara Vāta disorders.

RASARATNASAMUCCAYA (13th Century AD): In the 30th chapter of Rasaratnasamucchaya specific Rasakalpa yoga for the management of Gṛdhrasīvāta is mentioned.

BHĀVAPRAKĀŚA (16th Century AD):

In Bhāvaprakāśa, one of the minor compendiums, Gṛdhrasī is described under Vātavyādhi adhikāra. Bhāvamiśra mainly followed Mādhavanidāna for the description of the disease and Cakradatta for the treatment purpose.

YOGARATNĀKARA (17th Century AD): In Yogaratnākara symptomatology and types of Gṛdhrasī has been mentioned under Vātavyādhi Nidāna. Stage wise therapeutic measures are described for Vāta disorders in general which suits Gṛdhrasī also. Many preparations are mentioned, some are borrowed from previous works adding some own formulations.

BHAIṢAJYARATNĀVALĪ (18th Century AD): In Bhaiṣajyaratnāvalī written by Govindadās Sen, treatment of Gṛdhrasī is described duly following Cakradatta[46].

GAṄGĀDHAR RAY (1799 - 1885): Gaṅgādhar Roy (1799-1885) in his Jalpakalpataru commentary on Caraka Saṃhitā made some important observations particularly in Gṛdhrasī Cikitsā. He has taken into consideration a pāṭhāntara of Caraka in the particular context i.e. "Antarākaṇḍarāṅgulyo Śīrovastyāgnikarmaca". He advised Śīrovasti and Agnikarma in Gṛdhrasī[47].

ĀYURVEDA IN MODERN AGE: Vaidyaratnam P.S.Varier in his works Aṣṭāṅgaśārīra and Bṛhatśārīra described Gṛdhrasīnāḍī and associated structures[48,49].Dr.Gananath Sen in his Pratyakṣaśārīram described anatomy of Gṛdhrasī nāḍī. In his another outstanding work Siddhāntanidāna, Gṛdhrasī is described in the sixth chapter along with Śūlas. He described it under Vraṇaśothaja sūlas. He considered Gṛdhrasī of vraṇaśotha (inflammatory) origin involving the Gṛdhrasī nāḍī (sciatic nerve)[50].

GREEK AND MODERN MEDICINE: Sciatica, the counterpart of Gṛdhrasīvāta is observed to be very prevalent throughout the world. Hence many scientists, physicians, orthopaedic surgeons, physiotherapists etc. throughout the world are engaged in the research to find out the aetiopathogenesis and management of this condition.The present knowledge pertaining to Sciatica regarding aetiology, pathology, diagnosis, evaluation, prognosis, therapeutic measures etc. are the outcome of the observations and contributions of huge number of scientists right from Hippocrates, the father of modern medi-

cine. Some of the observations previously acclaimed as outstanding proved to be inaccurate subsequently. However the scientific zeal and foundations laid by past workers cannot be ignored. Hence a brief account of the salient features of the work of Greek and modern scientists pertaining to Sciatica and its allied conditions are presented here.People were crippled by sciatica and backache since thousands of years. The holy Bible also contains the description of this disorder. Sciatica has been recorded since antiquity[51].It is surprising to note that even Shakespeare knew about sciatica very well. He said, "Thou cold sciatica cripple our senators that their limbs may halt as lamely as their manners"[51].Despite of the awareness of Sciatica and backache since many centuries, the identification of exact cause is not known – in some cases even today.

DEVELOPMENT IN THE FIELD OF SCIATICA:

- **Hippocrates (490-370 BC)**[52,53] has also described sciatica. He practiced manipulation and traction also in this condition. Hippocrates was allegedly, the first physician to use the term 'sciatica', deriving from the Greek ischios, hip. Pain in the pelvis and leg was generally called sciatica and attributed to a diseased or subluxated hip. Hippocrates noticed symptoms which were more frequent in summer and autumn. He treated the condition with warm water applied to the painful area, fumigations, fasting, and subsequently, laxatives and ingestion of boiled milk of the female ass.
- **Galen (AD 131-202)**[54] one hundred years later, recognized abnormal spinal postures and coined the words lordosis, kyphosis, and scoliosis and he attempted to correct them. He treated sciatica by bloodletting, to dispose of 'the noxious humours', which he held responsible and also practiced manipulation and traction to treat cases of sciatica and backache.
- **Caelius Aurelianus (5th century AD)**[54] A Roman physician provided in his work Tardarum sive chronicarum passionum, a remarkably detailed description of the physical exercises and a type of traction in his treatment of sciatica. It was based on his translation of two works of Soranus of Ephesus (98–138 AD), chief of the 'methodist' school of medicine, De morbis acutis et chronicis. He was familiar with the symptoms of sciatica. He described severe pain emanating from the lower back and radiating into the buttocks, perineum, and even the popliteal fossa, calf, foot, and toes, accompanied by a severe low-back spasm, sensory disturbances, and wasting of the leg. He associated constipation and claudication with the complaint, and noted that sciatica sufferers altered their posture during the defecation. In some patients, he observed a 'woodenness', a crooked posture, and the inability to bend forward. He also introduced a form of spinal traction for low back pain.
- **Paulus Aegineta (625–690 AD)**[55] Alexandrian physician and surgeon, the last major ancient Greek medical encyclopaedist, who wrote Epitomae medicae libri septem (Medical Compendium in Seven Books), which subsumed nearly all medical knowledge of his time. He described sciatica in it, which extended from about the buttock and groin to the knee, often as far as the extremities of the foot'; but he confused it with gout. It is clear that like others of this period, no distinction was made between pain arising in the joint and spine. He believed that it was caused by a thick humour that disturbed the articulations of the hip joint.

- **Domenico Cotugno (1736-1822)**[56] of Naples, in the year 1764 in De Ischiade Nervosa Commentarius distinguished an 'arthritic sciatica', identifiable with hip pain and a 'nervous sciatica', which was classified as 'postica' (posterior) or 'antica' (anterior). In this crucial work, Cotugno, an astute clinical observer, differentiated sciatic nerve pain from arthritis of the hip, probably for the first time. The eponym: Cotugno's syndrome, was subsequently applied to unilateral sciatic neuralgia that was generally considered an 'interstitial sciatic neuritis' for the next 150 years.
- **Commentarius** of **1764**[56] in his first book nervosa described that the dropsy of the dural funnel enclosing the sciatic nerve causes Sciatica. In his subsequent book, Treatise on nervous sciatica or nervous high gout of 1775 he described the causes of sciatica as accumulation of acrid fluid in the outer vaginae of the ischiadic (sciatica) nerve. He pointed out that sciatica may lead to semi paralysis and muscle wasting.
- **Kocherhad**[53] reported in **1806**, the post mortem disc displacement at L1–L2 in a man who had fallen 100 ft. Kocher considered that the protruded intervertebral disc might cause cord compression. But the relation of such lesions to sciatica was not identified then.
- **Harrison E.**[53] in **1821** made some fundamental observations pertaining to anatomy, physiology and pathology of spinal column. He observed the compression of intervertebral disc during strenuous position of spine and restoration of nucleus pulposus due to its elasticity. He stated that spinal ligaments could become stretched, thus allowing a single vertebra to become displaced.
- **Richard Bright (1789-1858)** described neuralgia in his book on neuropathology (1827). He considered sciatica, an inflammatory condition of the investing membrane of the nerve in the section of neuralgia.
- **Raidore (H.C.)**[53] described root pain to compression at the intervertebral foramen and recognized degeneration of intervertebral disc.
- **Emst Charles lasegue (1816-1883)**[57], French physician made many contributions pertaining to sciatica in 1864 in his work 'Sur la Sciatica'. He described wasting of the muscles in the effected limb. He demonstrated that elevation of the extended lower extremity causes pain along sciatic nerve in sciatica recorded by J.J. Forst, Lasegue's pupil in 1864.
- **Forst, J.J.**[58] the pupil of Lasegue published limitation of straight leg-raising in sciatica as Lasegue's sign in **1881** in his work on Sciatica.
- **AG Smith**[59] was the first to perform a laminectomy in **1829.**
- **Louis T.J. Landouzy (1845-1917)**, French physician described a form of sciatica complicated by atrophy of the muscles of the affected leg, published in 1875, known as Landouzy's sciatica.
- **Charoot J.M**. was the first to describe the characteristic spinal deformity in sciatica in **1888.**
- **Causade** and **Chauffard in 1909** claimed cure of sciatica by a simple epidural injection.
- **Zizine M.** in **1910** made some observations pertaining to sciatica. He concluded that the crossed straight leg raising is impaired when there is lesion in the spinal cord.
- **Jocl Ernest Goldthwaite (1866-1922)**, American physician suggested that inter-

vertebral disc injury may be the cause of sciatica, lumbago, paraplegia etc. reported in 1911.

- **Puttiv** in **1927**[54] made important observations pertaining to pathogenesis of sciatica pain. He regarded that the variability of angle at the lumbosacral facets predisposes to sciatica. He incriminated the facet joint in sciatica.
- **William Jason Mixter**[59], American physician in **1880,** with **Joseph Section Barr**, demonstrated the role played by intervertebral disc herniation in the causation of 'Sciatica'. They reported cure of sciatica by removing the protruded disc material in **1934** which attracted wide recognition.
- **Inman V.T.** and **Sounders J.B.** reported in **1942** the results of their study in clinic-anatomical aspects of lumbosacral region. They were the first to show that the straight leg raising moved the nerve roots. They had made many observations pertaining to straight leg raising and the movement of nerve roots.
- **Key J.A.** in **1945** reported that intervertebral disc lesions are the commonest cause of low back pain with or without sciatica.
- **Cyriax J.** in **1950**, contemplated that traction as an ambulant treatment for sciatica. He observed that epidural local anesthesia fails when root pain results from compression phenomena.
- **Coomes** in **1963**, confirmed that the treatment of choice is epidural anesthesia in several cases of sciatica which reduced the period of bed rest.
- **Smith** in **1964** tried to dissolve nucleus pulposus by intra discal injection of chymopapain.
- **Toakely J.G. Hutton** and **Francis S.R.** In **1973**, reported the results of Rees neurofasciotomy, on cases of sciatica and allied conditions.
- **Nelson M.A.** in **1975**, reported that the cure rate is high in cases of lumbar symptoms associated with sciatica by laminectomy.
- **Mathews J.A.** in **1977**, advocated the importance of rest in bed for cases of sciatica.
- **Splenger** in **1982**, in his extensive study concluded that limited disc excision with selective fenestration procedure gives very good result provided the herniated disc is single level and mid line.
- **Negi** in **1985** reported 93.5% good to excellent result with discectomy by fenestration method and found it to be an extremely satisfactory method.
- **Neil Kahanovitz** and **Joh Maculloch** in **1989** after a comparative clinical study concluded that microdiscectomy was no way clinically superior to limited discectomy through limited laminectomy.
- **Michel Newman** in **1995** did outpatient conventional fenestration and disc excision in 75 cases and concluded that outpatient surgery is a practical alternative for selective patients requiring disc surgery.

CONCLUSION: There is a lot of development in the field of sciatica and allied conditions in the contemporary medical science. Different types of advanced surgical procedures are also developed but with poor outcome and different complications. On the other hand the simple treatment principles advised by the ancient Ayurvedic scholars regarding the management of Gridhrasi though centuries old, are equally effective.

REFERENCES

1.Yadavji Trikamji Acharya, Charaka Samhita, Published by Chaukhamba

Surabharati Prakashan, Varanasi, 2009 (Ca.Su.20:11) p.113.
2.Yadavji Trikamji Acharya, Charaka Samhita, Published by Chaukhamba Surabharati Prakashan, Varanasi, 2009 (Ca.Su.19:3) p.110.
3.Yadavji Trikamji Acharya, Charaka Samhita, Published by Chaukhamba Surabharati Prakashan, Varanasi, 2009 (Ca.Su.28:56-57) p.619.
4.Yadavji Trikamji Acharya, Charaka Samhita, Published by Chaukhamba Surabharati Prakashan, Varanasi, 2009 (Ca.Su.28:101) p.621.
5.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Su.21:5) p.112.
6.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Ni.1:9) p.295.
7.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Sa.5:29) p.61.
8.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Sa.6:27) p. 74.
9.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Sa.8:8) p.86.
10.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Ni.1:74) p.303.
11.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Ni.15:7) p.378.
12.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Ci.5:23) p. 43.
13.Ambikadutta Shastri, Sushruta Samhita, Published by Chaukhamba Samskrit Samsthan, Varanasi, 2012 (Su.Ci.5:40-45) p.45.
14.Rabidatta Tripathi, Astanga Samgraha (Sutra sthana), published by Chaukhamba Sanskrit Pratisthan, Varanasi, 2006 (AS.Su.1:23/1) p. 8.
15.Rabidatta Tripathi, Astanga Samgraha (Sutra sthana), published by Chaukhamba Sanskrit Pratisthan, Varanasi, 2006 (AS.Su.20:3) p.374.
16.K.R. Srikanta Murthy, Astanga samgraha (volume-2), Published by Chaukhamba Orientalia, Varanasi, 2003 (AS.Ni.15:56) p. 248.
17.Hari Sadashiva shastri Paradakara, Astanga Hridaya, Published by Chaukhamba surabharati prakashan, Varanasi,2010, (AH.Ni.15:54), p.535.
18.Hari Sadashiva shastri Paradakara, Astanga Hridaya, Published by Chaukhamba surabharati prakashan, Varanasi,2010, (AH.Ni.15:14/1), p.531.
19.Hari Sadashiva shastri Paradakara, Astanga Hridaya, Published by Chaukhamba surabharati prakashan, Varanasi,2010, (AH.Ci.21:22/2), p.724.
20.Hari Sadashiva shastri Paradakara, Astanga Hridaya, Published by Chaukhamba surabharati prakashan, Varanasi,2010, (AH.Su.27:15/1), p.328.
21.Abhay Katyayan, Bhela samhita, Published by Chaukhamba Surabharati Prakashan, Varanasi, 2009 (Bhel.Su.25:33/2-39) p. 121
22.Abhay Katyayan, Bhela samhita, Published by Chaukhamba Surabharati Prakashan, Varanasi, 2009 (Bhel.Sa.7:8) p.237.
23.Abhay Katyayan, Bhela samhita, Published by Chaukhamba Surabharati

Prakashan, Varanasi, 2009 (Bhel.Ci.24:44/2-46/1) p. 457-458.
24.P. V. Tiwari, Kashyapa samhita, Published by Chaukhamba Viswabharati, Varanasi, 2002 (Ka.Su.27:10) p. 65.
25.P. V. Tiwari, Kashyapa samhita, Published by Chaukhamba Viswabharati, Varanasi, 2002 (Ka.Su.27:21) p.68.
26.K. R. Srikanta murthy, Madhava Nidanam (Roga vinischaya), Published by Chaukhamba Orientalia, Varanasi, 2007(MN.22:54-56) p. 86.
27.Jaimini Pandey, Harita samhita, published by Chaukhamba Viswabharati, Varanasi, 2010 (Ha.Tri.20:31-32) p. 363.
28.Jaimini Pandey, Harita samhita, published by Chaukhamba Viswabharati, Varanasi, 2010 (Ha.Tri.22:1-2) p. 380.
29.Jaimini Pandey, Harita samhita, published by Chaukhamba Viswabharati, Varanasi, 2010 (Ha.Tri.22:6-11) p380-381..
30.Jaimini Pandey, Harita samhita, published by Chaukhamba Viswabharati, Varanasi, 2010 (Ha.Tri.22:10) p. 381.
31.Yadavji Trikamji Acharya, Charaka samhita with Ayurveda- dipika commentary, Chaukhamba Prakashan, Varanasi, 2007(Cakrapāṇi on Ca.Ci.28:1-2) p. 616.
32.Yadavji Trikamji Acharya, Charaka samhita with Ayurveda- dipika commentary, Chaukhamba Prakashan, Varanasi, 2007 (Cakrapāṇi on Ca.Ci.28:9) p. 617.
33.Yadavji Trikamji Acharya, Charaka samhita with Ayurveda- dipika commentary, Chaukhamba Prakashan, Varanasi, 2007 (Cakrapāṇi on Ca.Ci.28:101) p. 621.
34.P. V .Sarma, Chakradatta, published by Chaukhamba Orientalia, Varanasi, 2007 (CD.22:48-53) p.189-190.
35.P.V.Sarma, Astanga hridayam, published by Chaukhamba Orientalia, Varanasi, 2005 (Aruṇdatta on AH.Ni.15:54) p. 535.
36.Ramkumar Ray , Vanga sena samhita, published by Prachya prakashan, Varanasi,2010 (VS.Vātavyadhi adhikara:113-115 & 571-573) p. 267, 299
37.Ramkumar Ray , Vanga sena samhita, published by Prachya prakashan, Varanasi,2010 (VS.Vātavyādhi adhikara: 574-575) p. 299.
38.Ramkumar Ray , Vanga sena samhita, published by Prachya prakashan, Varanasi,2010 (VS.Vātavyādhi adhikara:579) p. 299
39.Ramkumar Ray , Vanga sena samhita, published by Prachya prakashan, Varanasi,2010 (VS.Vātavyādhi adhikara:132-133/1) p. 269.
40.Ramkumar Ray , Vanga sena samhita, published by Prachya prakashan, Varanasi,2010 (VS.Vātavyādhi adhikara:597) p. 301.
41.Gadanigraha, Chaukhamba, Varanasi.p.464 -520
42.P.V.Sarma, Shushruta samhita with Nivandha samgraha commentary, published by Chaukhamba Orientalia, Varanasi, 2007(Ḍalhaṇa on Su.Ni.1:74) p. 268.
43.P.V.Sarma, Shushruta samhita with Nivandha samgraha commentary, published by Chaukhamba Orientalia, Varanasi, 2007(Ḍalhaṇa on Su.Ci.5:23) p. 428.
44.(Sa.PK.7:191/2-192/1)
45.G.Purushottamacharyulu, Gridhrasi (Sciatica) and associated conditions, published by Dept. of Publications, Aryavaidyashala, Kottakkal,2010, p.29-32.
46.Rajeswardatta Shastri, Bhaisajya ratnavali, published by Chaukhamba Sanskrit samsthan, Varanasi, 2004,(BR.Vātavyādhirogādhikāra:37-48) p. 377-378.

47.(Gaṅgādhar Roy on Ca.Ci.28:30).
48.Varier P.S., Brihat Sharira, published by Dept. of Publications, Aryavaidyashala, Kottakkal,1969, p. 15-20.
49.Varier P.S., Astanga Sharira, published by Dept. of Publications, Aryavaidyashala, Kottakkal,1961, p. 74-131.
50.Gananath Sen, Siddhanta Nidan, Published by Chaukhamba, Varanasi,1966, p. 179-186, 210-221.
51.G.Purushottamacharyulu, Gridhrasi(Sciatica) and associated conditions, published by Dept. of Publications, Aryavaidyashala, Kottakkal, 2010, p.37.
52.Hippocrates, The genuine works of Hippocrates(translated by Adams F). W Wood, New York,USA,1929.
53.Postacchini F, The role of Europe in the spine, European spine society, Eur Spine J,1995, 4: 323-326.
54.J M S Pearce, A brief history of sciatica, Spinal Cord (2007) 45, 592-596.
55.Aegineta Paulus, The seven books of Paulus (translated by Adams), Sydenham society, London, 1844.
56.Cutugnu D, The ischiade nervosacommentaries,Naples,Simoni,1764 ,pp 9-14.
57.Lasegue C, Considerations Sur La Sciatique, Arch Gen Med, 1864, 558-560.
58.Pearce J M S, J-J Frost and Lasegue's sign, JNNP,1988,51:1157.
59.Mixter W J, Barr J S. Rupture of the inter vertebral disc with involvement of spinal canal, N Eng J Med, 1934,211: 210-214.

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