Report on the AMS dates of charcoal samples unearthed from the cist burial site at Niramakulam, Pamba river basin, South Kerala

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Abstract

Niramakulam is a cist burial site located in the Pathanamthitta district of south Kerala. Typical megalithic black and red wares, black polished ring stands and lids, etched carnelian beads, charcoal samples and iron implements were retrieved from the excavated cist burial. The charcoal samples collected from both inside and outside of the chamber had been sent to the Beta Analytic Inc .Laboratory for radiocarbon dating. The present paper points out the dates obtained for the samples and its significance in the cultural and chronological aspects of megalithic culture in Kerala in short and Pamba basin in particular. The AMS dates of Niramakulam ranges from 4th century BCE to 4rd century CE.

Keywords

Niramakulam, Cist burial, Excavated materials, Radiocarbon dating, Significance.

Introduction

Niramakulam (9°11’335’’N; 76°59’583’’E), is situated 4km west of Kokkathodu, a remote village located in the forest tracts of Western Ghats in Kozhenchery taluk of Pathanamthitta district. The site (Figure 1) is surrounded by highly vegetated hilly terrains and plenty of granitic and gneissic rocky outcrops. Kokkathode and Kallar are feeder streams to river Pamba and Achankovil which flows through rocky and pebbly beds at the foothills at a distance of 5 to 6km away from Niramakulam. The site is located at 1538 ft. above MSL. About ten megaliths have been discovered from Niramakulam which included the variety of Cist and Dolmenoid cist. These megaliths are found in a rubber plantation and all are in a disturbed nature. To address the nature and date of megaliths in the region, a disturbed megalithic cist at Niramakulam was selected for a salvage excavation in 2012 by the author. The cist was in a stage of human vandalism (Local people already excavated quarter portion of the cist and orthostats found above the ground level were broken and used to make handrails).

Figure 1 Location map of the site Niramakulam

The Cist is rectangular in shape and had a basal slab which was bounded by four vertically placed slabs along the periphery and possibly had a capstone (broken pieces of it were found close to the western side of the Cist). The orthostatic slabs of the Cist were of gneiss rocks broken from the adjoining hills. The Cist is arranged in a clockwise direction and has a porthole on the southern orthostatic stone slab, which is a rare occurrence among the megaliths in Kerala. It is oriented in a north-south direction with a slight NW-SE deviation. The average thickness of the stone slabs is 20 cm. The length of the Cist is 2.15 m and width is 1.62 m. Final depth of the chamber was 2.13 m. The horizontal slab laid at the base of the Cist was partitioned across its length at the north-east corner by a vertically set slab measuring 1.09 m in length, 55cm in width and 18 cm in thickness. The thickness of the basal slab was 3 cm. On the southern slab of the cist, at a depth of 57 cm from the top, a 'U' shaped broken port hole was found which was closed from the outside with the help of a thick round stone slab.

Material Remains from the site

Material remains found from the excavation include pottery (Figure 2&3), iron implements, beads and charcoal samples. Total of eight complete and two half broken ring stands, three knobs and four complete lids, two bowls, three pots, one cup like vessel, ten white dotted painted shreds and two hundred and sixty diagnostic and non-diagnostic shreds and two thousand five hundred and forty six body sherds have been unearthed from the cist. The analysis showed six types of ceramics at the site i.e. Black and red ware, red ware, black ware, black polished ware, some chocolate colored and a few grey ware

Figure 2. Rings stands, lids, pot, cup shaped vessel and bowl

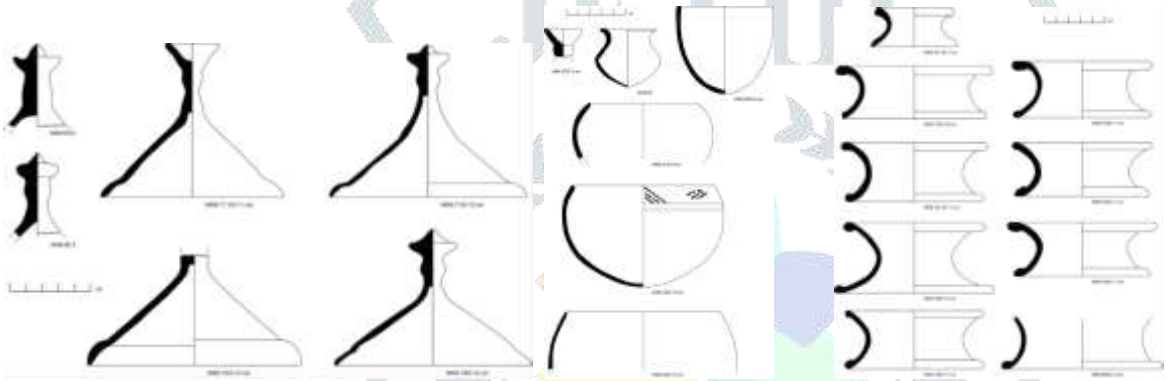

Figure 3 Drawings of pottery from Niramakulam

Eight iron implements were found from the cist which included varieties of sickles and knives (Figure 4). Among these, six are almost in a good condition but two are broken. But most of them are corroded and soil encrusted. Besides these implements, one iron nail and some unidentified objects are also recovered from the site. Iron slags/ingots were also collected Niramakulam itself and from nearby area like Kurichy locality I of the site .The iron implements are varying in their measurements and properties. The length of the implements varies from 3cm to 23 cm.

Figure 4. Iron artifacts collected from the cist burial

Figure 5.Carnelean Beads

Fifteen carnelian beads were collected from the excavation. Out of these 4 beads are etched (Decorated) tablet shaped, 3 are etched barrel shaped and 8 are unetched (without decoration) round and circular beads (Figure 5)

AMS dates and its significance

Generally the megaliths in India are associated with black and red ware and iron implements. The Pamba basin is also not an exception to this. Scrutinizing Roman coins and soil deposit from the excavation at Brahmagiri, Mortimer Wheeler was the first person who stated a tentative chronology of megalithic culture in south India as 200-300 BCE as the lower limit and 1st century CE as the upper limit (Wheeler.1948.300). After Wheeler at Nilgiris, Roman coins were discovered belonging to the 4th century CE which lengthened the upper limit from 1st century CE to 4th CE (Srinivasan.et. al.1953.84). Later, the inscriptional evidence of

the Kurangathupadi of 13 century CE, references in Tamil anthologies of later period and living tradition of Megalithism identified among various communities make it problematic to assign a definite upper boundary for Megalithism.

It was the invention of the radiocarbon dating that shifted the dates earlier to 800 BCE to 400 BCE in Vidarbha region. A series of radiocarbon dating produced from the excavations at Bhagimohari, Naikund, Takalghat-Khapa, Khirwada etc. all from the eastern Vidarbha region. Nagaraja Rao pushed back the lower limit around 1000 B.C on the basis of iron implements and white dotted black and red ware found at Hallur (Jayashree.2007.136). Two C-14 determination of Hallur was 955+-100 and 1105+-100 BCE (Khanna.1992.74-75). Based on the C14 dates obtained from Payampalli, Arikamedu, Kodumanal, Porunthal and Appukkallu, the Iron Age culture of Tamil Nadu was placed on the timeline somewhere around 700 BCE. The TL date of Kumaranhalli and Tadahanahalli placed the South Indian Iron Age culture around 1440-1130 BCE (Rajan 2014.14-15).

Generally the Iron Age/Megalithic period of Kerala is considered in between 1000 BCE to 500 CE. Kerala has a limited number of radio carbon dating available so far. Initially B.K Thapar provide a tentative date of Porkkalam ranging from 3rd century BCE to 1st century CE based on the presence of etched carnelian beads with designs, which have parallels with Brahmanabad, Brahmapuri, Maski, Sanghanakallu etc. After him George and Mehta excavated Machad and Pazhayannur and ascribed to a period ranging from 2nd century BCE to 2nd century CE on the basis of beads, ceramic and iron implements (Jayashree.2007). Lots of tentative chronology has been made by various scholars, who worked on megaliths thereafter.

The earliest radiocarbon date of Kerala goes to Mangad in Kollam district. Two dates obtained for the sites are 2850+-90 and 2890+-70 years BP (Sathyamurthy 1992.32). Another C14 date of a cist burial is at Oliyani in Kottayam district that provides an age of 810+- 80 years BP (Rajendran.2005.45). Thermoluminescence date of the urn burial site at Poredam in Kollam district gives an age of 1375+-15 years BP (Rajendran.2012).

Recently two more sites obtained radiocarbon dates and they are from Kuttikkol in Kasargod district and Nannagadikkunnu in Palakkad. Kuttikkol has four dates (328+-19, 385+-18, 430+-19 and 2526+-20 years BP) and Nannagadikkunnu has two (2350+-30 and 490+-30 years BP) Both these sites showing a wide range of time period starting from 7^{th} to 6^{th} century CE from Kuttikkol and 4^{th} to 5^{th} century BCE from Nannagadikkunnu to 15^{th} century CE.

Excavators had an opinion that the later dates of these sites could be because of later disturbances .If it is not so, the upper limit of Megalithic culture in Kerala goes to 15^{th} century CE (Abhayan.2018.176-178). The site Oliyani also provides a later date which goes to 11^{th} -12^{th} century CE. However the later dates for the samples from Kuttikkol and Nannagadikkunnu were collected from disturbed deposit, we need more

scientific dates to fix the upper limit of Megaliths tradition of Kerala in a conclusive manner. (Abhayan. Personnel communication)

From Niramakulam cist, charcoal samples were collected from both the inside and the outer portion of the cist. The AMS date of Niramakulam ranges from 4th century BCE to 4rd century CE. Two samples named as NKM-12-1 and NKM -12-2 were sent to Beta Laboratories for AMS dating. Sample NKM-12-1 was collected from the cist's interior and sample NKM -12-2 was collected from outside (Mistakenly in earlier report it was mentioned that sample number two also collected from inside the cist). Sample NKM-12-1 from inside the cist provides a date of BCE 360 and BCE 170 (Cal BP 2310 to 2120) and sample NKM-12-2 from outside dates between 135 CE and 265 CE and 275 CE to 330 CE (Table 1).

Table 1: Report on the AMS dates of charcoal samples from Niramakulam

Sl. No	Laboratory And Lab Number	Site Name	Trench Number	Depth	AMS Date	Conventional age (uncalibrated)	Two sigma calibration
1	Beta Analytic Inc. 377787	Niramakulam	PN1	164-185 cm	2210+/-30 BP	2190+/-30 BP	Cal BC 360 to170(Cal BP 2310 to 2120)
2	Beta Analytic Inc. 377788	Niramakulam	PN1	96-105 cm	1820+/-30 BP	1790+/-30 BP	Cal AD 135 to 265 (cal BP 1815 TO 1685)and cal AD 275 to 330 (Cal BP 1675 TO 1620)

The significance of carbon dating results are, the sample number one is the earliest absolute date of human activity and artifacts from the hill range of Pamba river basin and sample number two showing the later date of human activity in the study area. This shows that there was continuity in using the site again by the members of the same family or clan or society over a large period of time.

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